OPENING A RESTAURANT TARGETING TOURISTS IN LONDON

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INTRODUCTION

- London is a big city visited by many every year presenting a great opportunity for investors.
- If a restaurant is to be opened in the city center, where would the best spot be to target tourists?
- What is the food type in demand the most in London so the proposed new restaurant can provide?

DATA

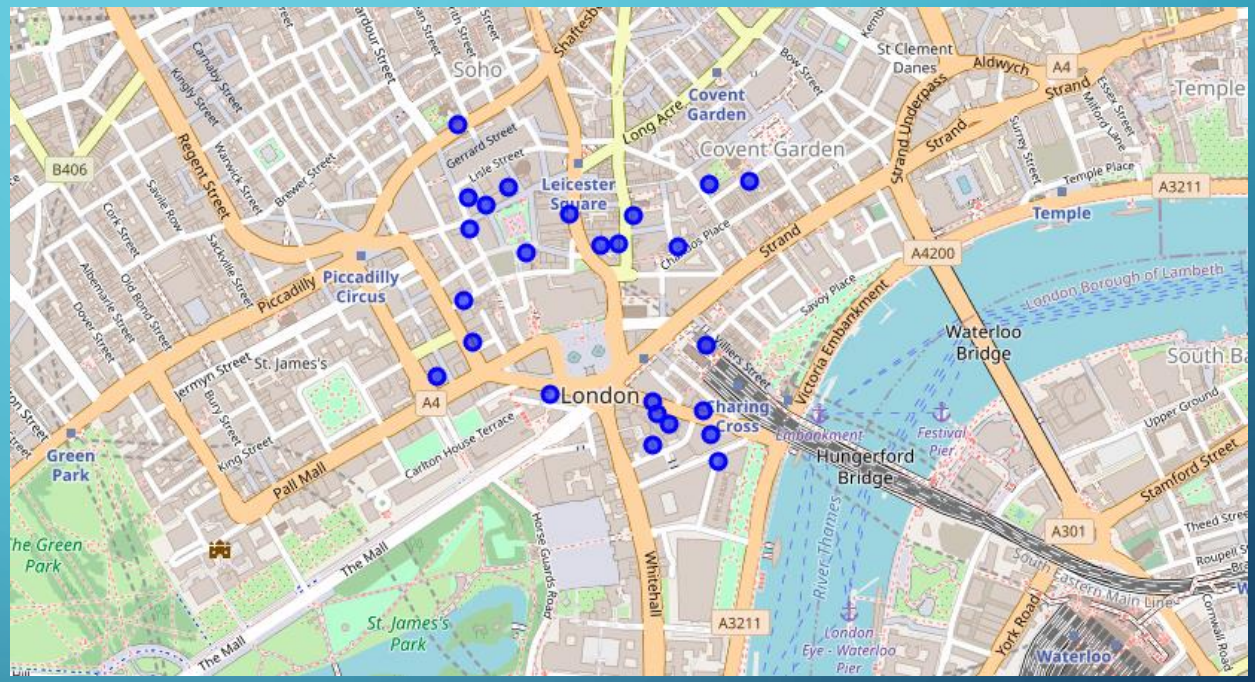
- Foursquare API is the main source of data in our problem.
- Two datasets were retrieved, cleaned, and prepared for analysis
  - Hotels dataset with locations
  - Trending restaurants dataset with categories and locations

ANALYSIS

METHODOLOGY AND RESULTS

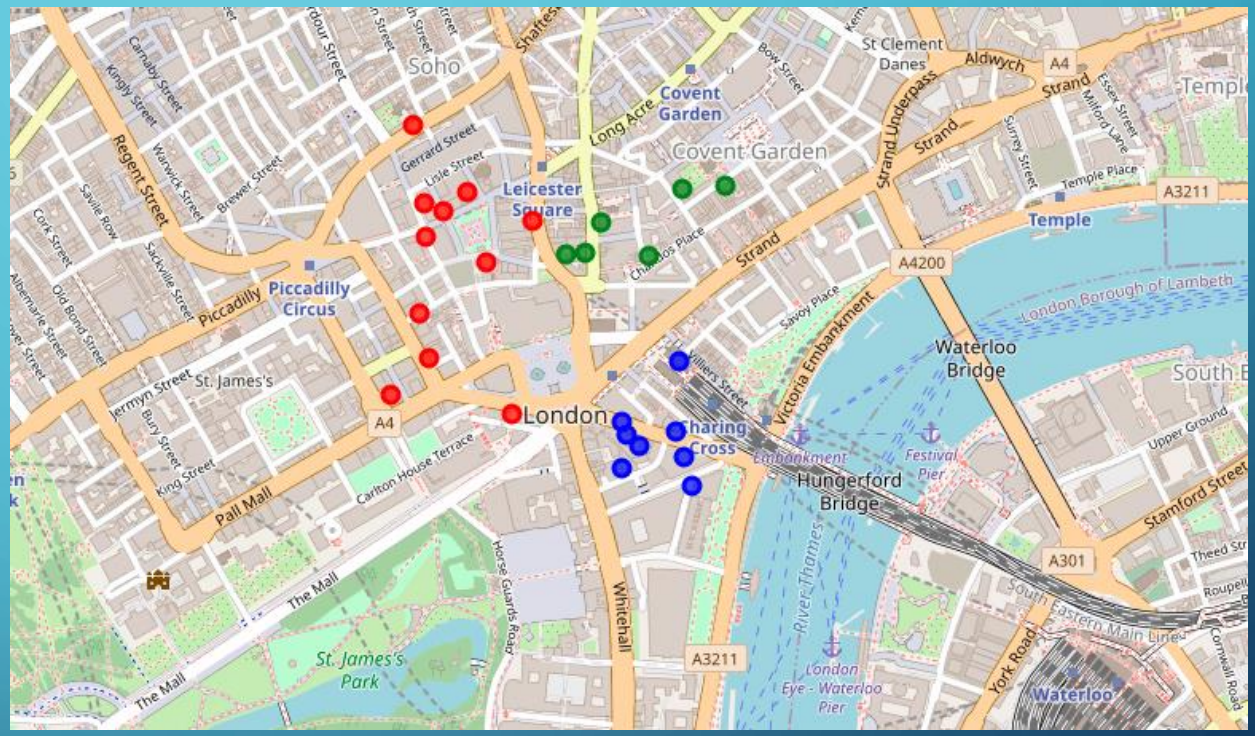
HOTELS LOCATIONS

- The hotels data was visualized on a map to see where they are located
- To find the touristic areas (where there are hotels in high densities), we need to group the hotels in clusters
- By visual inspection, we can see that they can be clustered in 3 groups



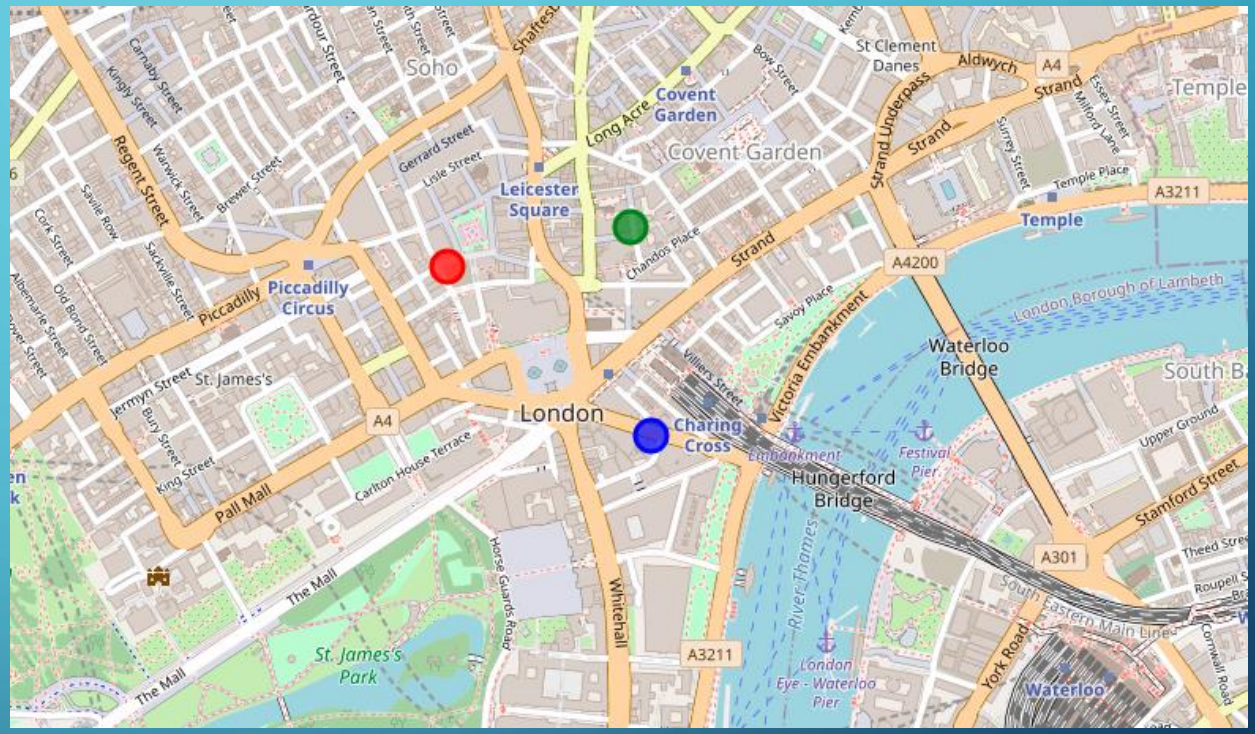
CLUSTERING HOTELS

- K-Means Clustering algorithm was used to group the hotels in three clusters
- Red-green-blue coloring scheme was used to differentiate hotels of different clusters



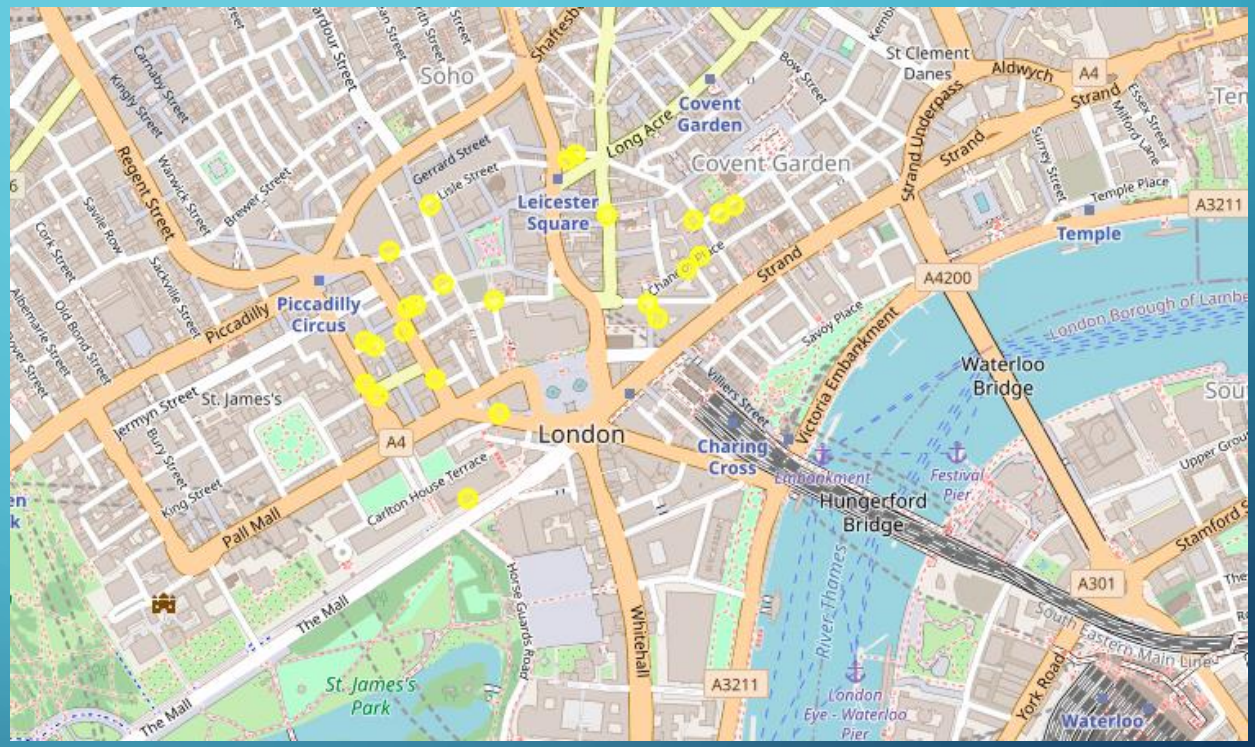
CLUSTERS CENTERS

- Each cluster generated by K-Means had hotels centered around a single point, these points' location coordinates were retrieved and visualized



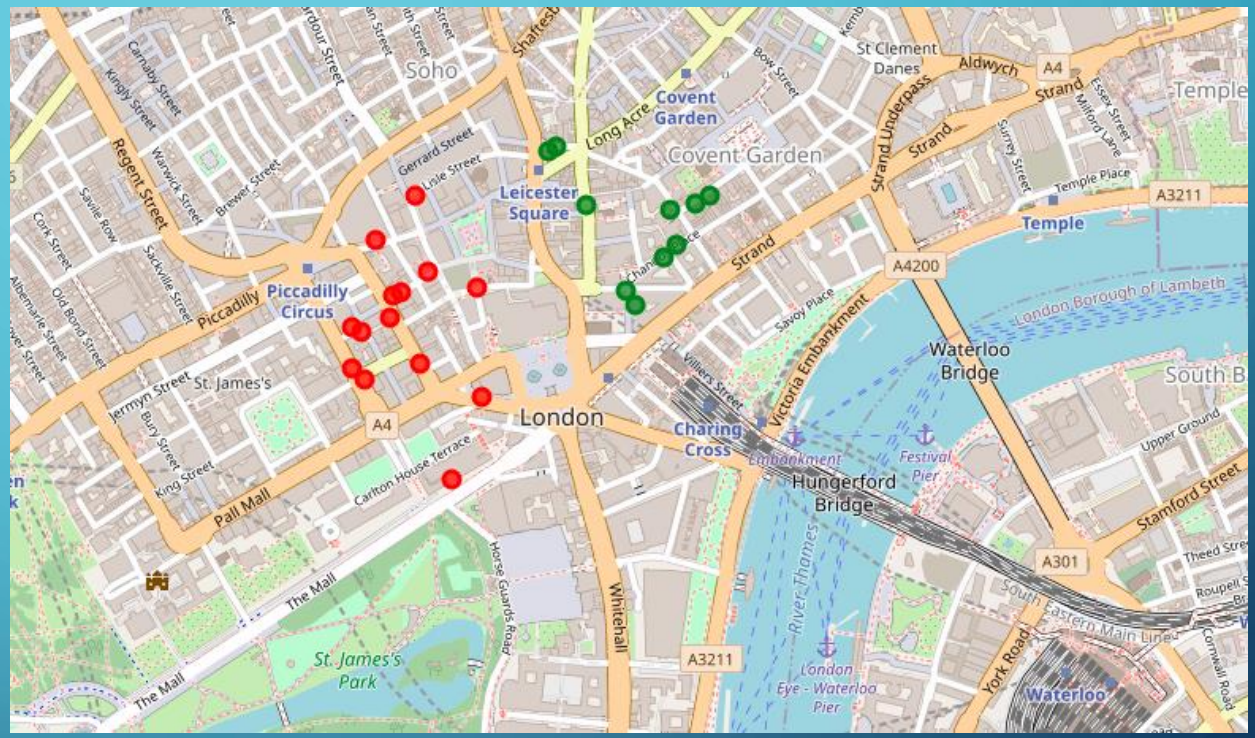
RESTAURANTS LOCATIONS

- Restaurants locations were retrieved from Foursquare API and visualized on the map
- To know which hotel cluster had the lowest competition in restaurants we need to classify the restaurants in these clusters and count them



CLASSIFYING RESTAURANTS

- KNN Classification algorithm was used to assign a class label to each restaurant in our dataset
- The KNN model was trained on the centers' locations dataset
- Each restaurant was assigned the value of the closest single center



LOWEST COMPETITION

- To find the lowest level of competition we look for the area of the minimum number of restaurants
- It was found that the blue region had no restaurants at all, thus no competition there

Class Label	Number of Restaurants
0/red	14
1/green	10
2/blue	0

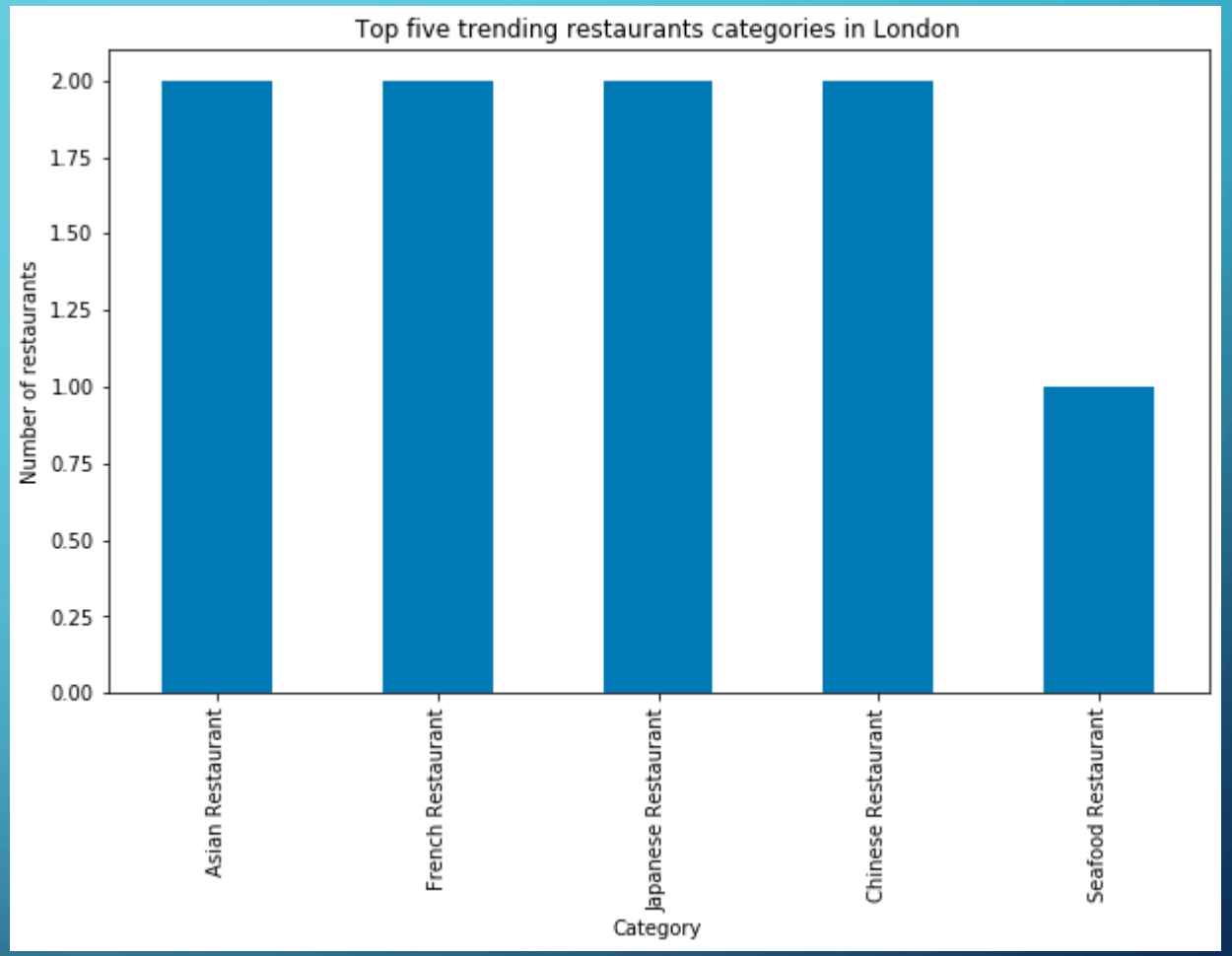
OPPORTUNITY EVALUATION

- To accurately evaluate the opportunity in the blue region, we verified that it had a sufficient number of hotels
- It was found that the blue region had 8 hotels, making it the second region in hotels' density, thus an attractive opportunity
- With minimum completion and attractive opportunity, the center of the blue region is the recommended spot

Cluster Label	Number of Hotels
0/red	11
1/green	6
2/blue	8

FOOD CATEGORY IN DEMAND

- To find the food category in demand we analyzed the category of each restaurant in the dataset and counted the frequency of each category
- As the dataset represent restaurants f the highest foot-traffic levels, they were considered trending venues
- It is seen that Asian, Japanese, and Chinese restaurants occur among the top five categories, so Asian food is the trend



CONCLUSION

- Location datasets about hotels and restaurants were retrieved from Foursquare API to find the best spot for a restaurant targeting tourists in London city center and the food type it should provide
- K-Means and KNN Machine Learning algorithms were used to analyze the datasete
- Location 2 (blue region) was found to be the best opportunity and its center to be the proposed location
- Asian food was trending in London and in demand, Thus favorable for the new restaurant