Coursera Capstone
IBM Applied Data Science Capstone

Opening a Seafood Restaurant in Houston

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Business Problem

The objective of this Capstone project is to analyze and select the best locations in the city of Houston to open a new seafood restaurant. Using Data Science methodology and instruments such as Data Analysis and Visualization, this project aims to provide solutions to answer the business question: Where in the city of Houston, should the investor open a seafood restaurant?

Data

Data required

- ➢ List of districts and neighborhoods of Houston
- ➢ Latitude and longitude coordinates of those neighborhoods
- ➢ Venue data, particularly data related to restaurants from Foursquare location data
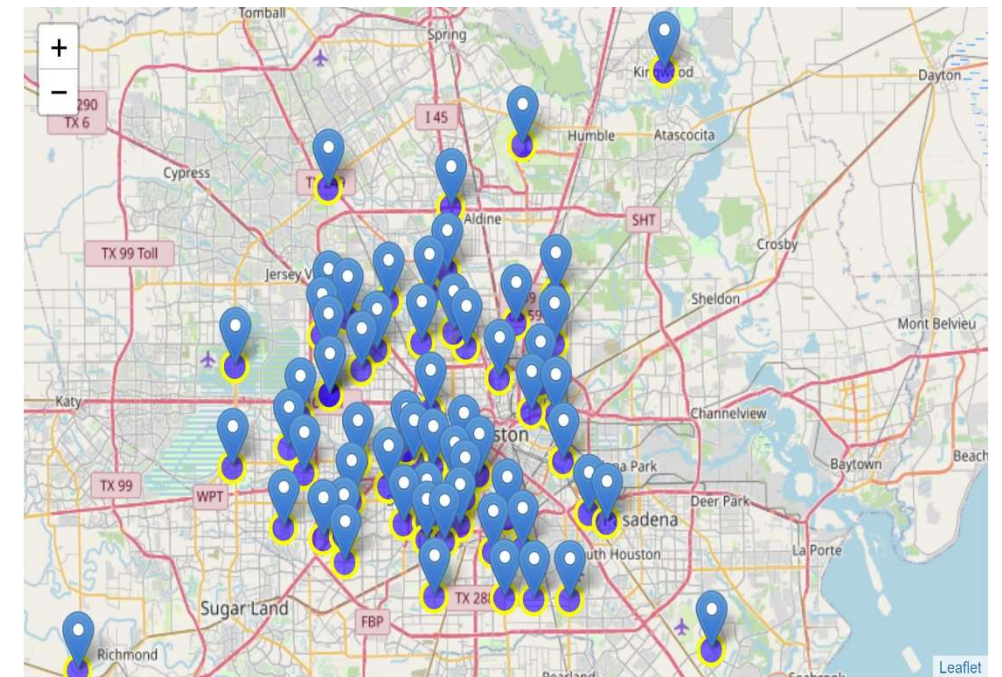
Sources of data

- ➢ Open-source dataset of Houston: https://www.kaggle.com/mrchristolpher/houston-texas-neighborhoods-lat-long-list
- ➢ Geocoder package for latitude and longitude coordinates
- ➢ Foursquare API for venue data

Methodology

- Collect the data from https://www.kaggle.com/mrchristolpher/houston-texas-neighborhoods-lat-long-list . Clean and process the data into a dataframe.

- Using Foursquare, locate all venues and then filter by seafood restaurants. Ratings, tips, and likes by users will be counted and added to the dataframe.

- Sort the data based on rankings.

- Visually assess the data will be using graphing from Python libraries.

Results

1. Houston city has 88 neighborhoods distributed in 8 districts.
2. There are 215 seafood restaurants in 88 neighborhoods with 32 unique restaurant names. The Pappadeaux Seafood Kitchen with 41 branches is the greatest one.
3. Southwest and Southeast districts with 15 and 14 neighborhoods have the maximum number of neighborhoods, respectively. Downtown with just 1 neighborhood has the minimum one.
4. Northwest district with 46 seafood restaurants has the maximum number of seafood restaurants and Downtown and Southeast with 0 and 13 seafood restaurants have the minimum numbers.
5. Despite Southeast district has a maximum number of neighborhoods but it has a minimum number of seafood restaurants.

6. Greater Greenspoint neighborhood in North district with 9 restaurants has the greatest number of seafood restaurants.
7. The overall rating of seafood restaurants in all districts is greater than 8.0 (62 among 215 seafood restaurants).
8. Southwest and East districts with 13 and 2 restaurants have the greatest and lowest number of seafood restaurants, respectively.
9. East district with just 2 high-rated restaurants among 14 has just 14% high-rated restaurants.
10. Fort Bend neighborhood with an average rating of 8.9 is the best neighborhood of high-quality seafood restaurants.
11. West district with an average rating of 8.68 is the best district of high-quality seafood restaurants.
12. Eddie V's Prime Seafood branches in the West or Northwest with a 9.1 overall rating are the best locations for Seafood cuisine in Houston.

Conclusion

✓ Answer to business question: Where in the city of Houston, should the investor open a seafood restaurant?

✓ The findings of this project may be used in real life to better understand the advantages and disadvantages of different Houston neighborhoods/districts in terms of opening a seafood restaurant.

✓ that Downtown, Southeast, or East District preferences are the best locations for opening a seafood restaurant in Houston.

thank you!