Yoga Studio Corporate Raider

Introduction / Business Problem

I have been approached by a self-described "Corporate Raider" who dreams of owning a chain of yoga studios. Rather than build them from the ground up, he'd like to find a group of at least 5 yoga studios that he can purchase and put together into a chain. The customer lives in Southern California and wants the yoga chain to be based in the Los Angeles area.

The customer is willing to build his yoga empire inland if that is all he can find, but would prefer to have it closer to the coast. The 5 yoga studios need to be relatively close to each other, preferably in the same neighborhood. This customer is not concerned about price because he plans to make the current owners an offer they can't refuse.

Data

The data that I will use to solve this problem will primarily come from the Foursquare API. From Foursquare, I will need to filter results for venues in categories containing the word "Yoga" and pull the following information for each venue:

- Name
- Rating
- Location (latitude / longitude)
- Address

Methodology

In this section, I will explain and execute the steps to perform the analysis. A key assumption used in the analysis is that yoga studios with lower ratings may be run by owners that may be willing to sell their business to my client. This analysis will follow these high-level steps:

- Find coordinates for Los Angeles, CA
- Use Foursquare to pull information about every yoga studio in a 20km radius of the coordinates in step 1
- Perform segmentation to classify each yoga studio into High, Medium, Low ratings
- Plot the yoga studios on a map, color-coding their rating category
- Review the map to determine a set of yoga studios that meet the business requirements

Results

The results from this method were inconclusive, due to data limitations. In the data exploration phase, I was able to map all yoga studios within 20km of Los Angeles on the map, to see where they are located (see image below).
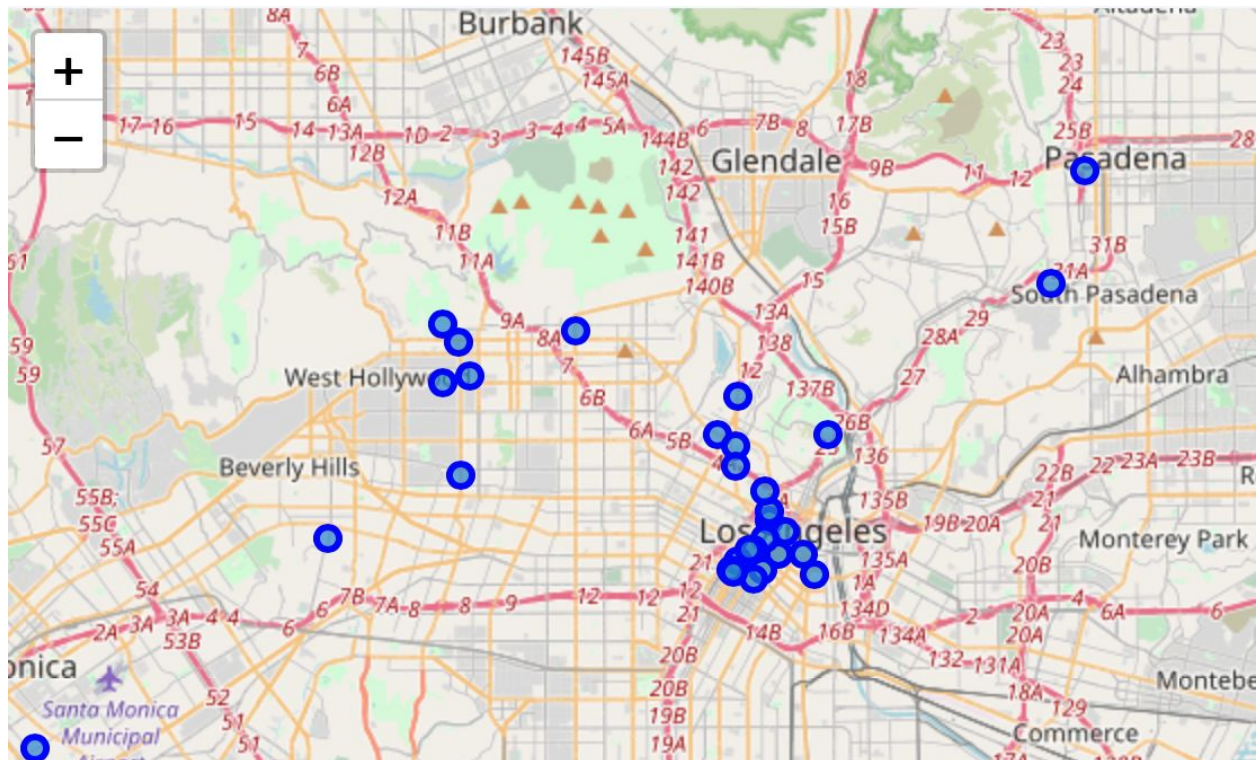
A key component of the analysis was supposed to be the rating of each yoga studio, assuming that those with lower ratings may be owned by people interested in selling. Unfortunately, obtaining rating data requires a "premium" Foursquare API call and the free account used was limited to only 2 / day. After obtaining 2 premium results, Foursquare returned the following message:

{'meta': {'code': 429,
  'errorType': 'quota_exceeded',
  'errorDetail': 'Quota exceeded',
  'requestId': '5e9f1645211536002033fcd8'},
 'response': {}}

I had planned to color code each yoga studio with either high, medium or low ratings, and use the map to find 5 that were near each other with low ratings. However, since I was unable to obtain ratings, all of the studios appeared the same on the map:
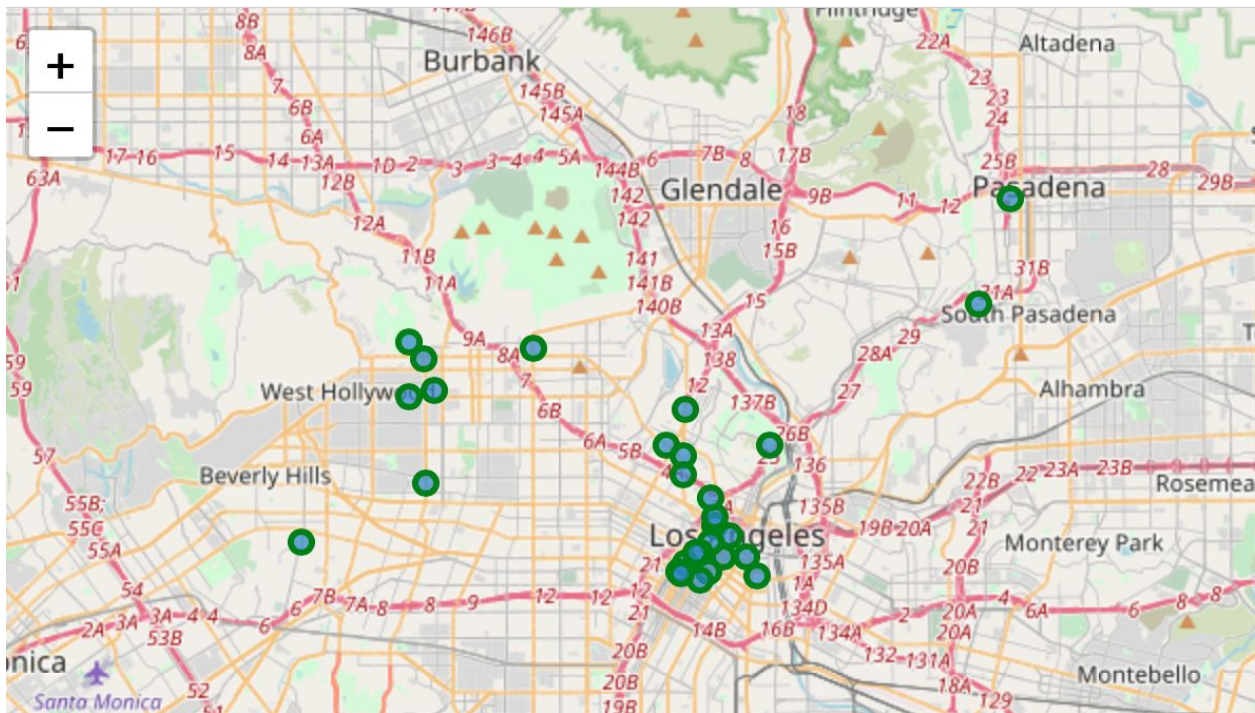
While it is not possible to target yoga studios with low ratings, visualizing them on the map can give us a good idea of which yoga studios to target based solely on geography.

Discussion

This project failed due to a lack of available data. This was a failure in the planning stages, as I should have known that ratings data required premium Foursquare calls and those are limited. It may have been possible to use other data sources to try to complete the analysis, including other rating systems, real estate pricing data, or other.

Conclusion

The customer's requirements were to find 5 yoga studios in the Los Angeles area that are relatively close to each other, preferably closer to the coast, and prime targets for being purchased. I attempted to use ratings data from Foursquare to find yoga studios matching those requirements but with low ratings, indicating they may be willing to sell.

Unfortunately, rating information requires premium Foursquare calls, and I am limited to 2/day with a free account, so I was not able to use ratings data. This leaves us with only the customer requirements. I can use the map to see that there is a grouping of studios in West Hollywood and Beverly Hills that are closer to the coast than the remaining studios and recommend that my client start there. If that doesn't work out, there seem to be a lot of yoga studios in the downtown LA area and he can probably build his empire there.

If this had been a real project for a real client, I would have purchased a higher level Foursquare API plan to pull all of the ratings data, but with the free account it was not possible.