



The Capstone Project:

Where to start a business in Seattle, WA



Cover page:

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Introduction

- An important factor to consider for opening a new business in any place, is the information about the existing business in the surrounding area. Knowing how saturated or vacant a kind of business is, will help on a better decision about the place and kind of the new endeavor.
- The use of location data to explore geographical locations allows us to analyze options for business in cities around the world.
- This is possible by gathering information about existing business in specific area, so the details can be classified and counted according different criteria in order to assemble a solidly funded recommendation.



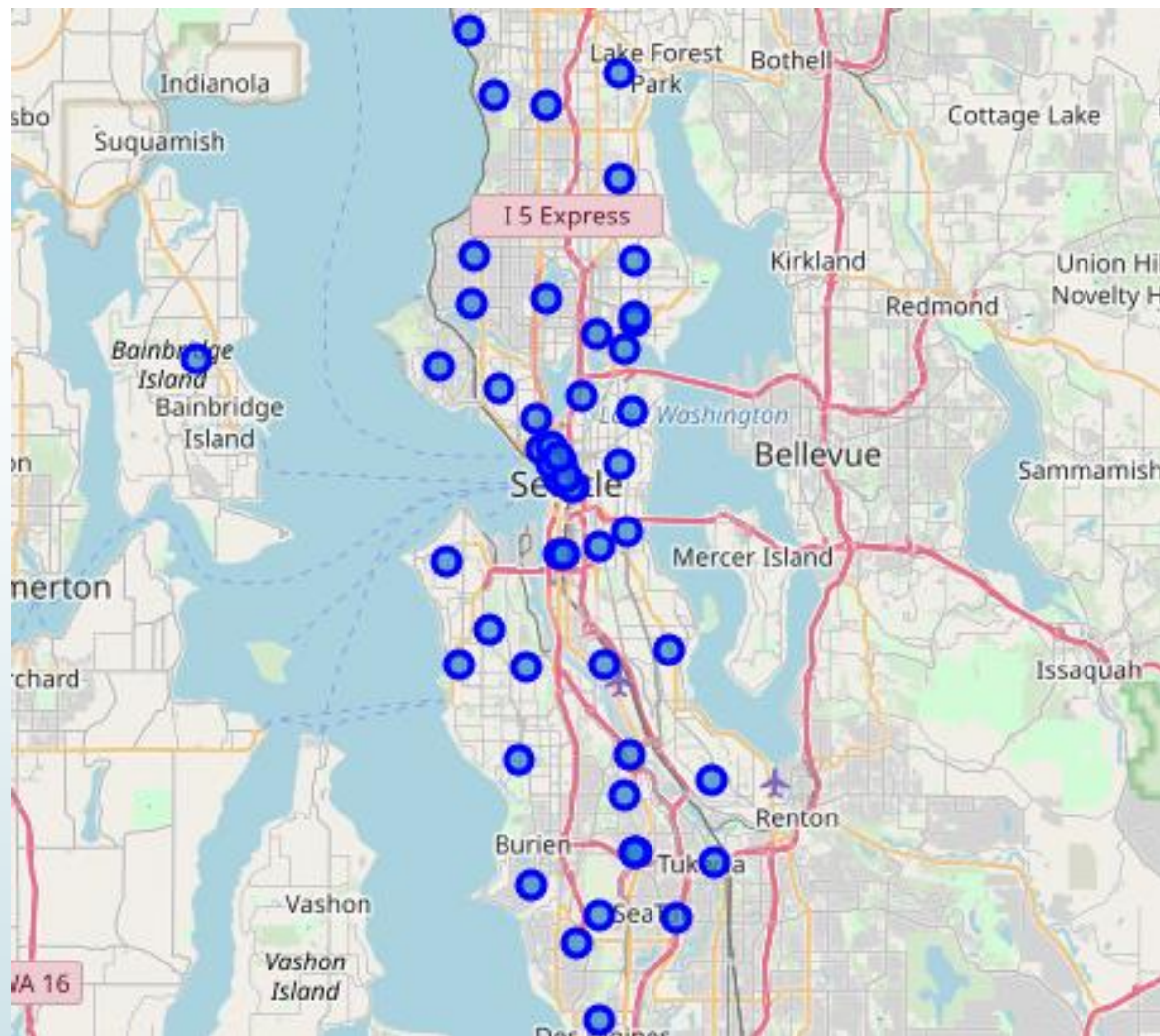
Business problem

- What location is recommended to open a business in Seattle, WA?
- The location is an important factor in the success of a new business. So, in order to answer the question, it is required to provide a set of alternatives for opening a business in Seattle, WA.
- The recommendations will include location and kind of pre-existing business in the surrounding area, so, it can be identified what business will successfully fit in that neighborhood.
- Foursquare location data will be used as source of information about the market places in the different neighborhoods in the city.
- This research should be interesting to investors looking for opportunities with a comprehensive argumentation and details about the different options, so their decisions will lead to successful results.



Data

- The data to be used will be extracted, mainly, from Foursquare.com. This will provide quantitative and qualitative information of pre-existing business, in order to identify the cluster where a new business could fit.
- However, to be able of requesting the information from Foursquare.com, it will be necessary to obtain the coordinates of the different zip codes in Seattle. This information will be extracted from <http://www.discoverseattle.net/zipcodes.php>, where the postal codes are listed along with their geographical coordinates.
- The queries to Foursquare will be focused on venues for different kind of business within the different postal codes that will be considered as reference to denote an area in Seattle.
- The analysis will be handled in data frames similar to the following, from where maps will be generated to obtain visualizations that will help in identifying the existing business so, the more convenient new business and its location can be determined.



Seattle, WA

Postal codes



Methodology

- These are the steps towards finding the results:
- Data collection: Obtain the information from the specified sources. This is accomplished by scrapping out the postal codes and their coordinates from the web page where they are available and by querying the Foursquare site with the appropriated parameters, including latitude and longitude of each of the Seattle's postal codes.
- Data preparation: Select and format the data collected so it can be feed into the different library's functions like pandas, NumPy, etc. The intermediate and final results will also be accommodated to be analyzed, discussed and shown.
- Modeling: A descriptive model will be used to show the density of different pre-existing business in each zip code and to identify what kind of business has less presence or is missing in the area.
- Compiling and assembling results: Based on the different kind of business and their density in an area, a list with the most and least common kind of business will be provided for each zip code in Seattle, so the stakeholders will be able to decide what kind of business and where to open their new business.



Results

- Following are the results for each zip code in Seattle.
- The first table shows a sample of the list of the most common kind of business, the second table shows the list of the least common kind of business within each zip code.
- The second table is a sample of the actual list of suggested business to be open in each zip code, since those are more likely to have no competency and/or to fulfill a vacancy in the market for that specific area.

Table 1

	Zip code	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	98101	Hotel	Coffee Shop	Clothing Store	New American Restaurant†	Italian Restaurant†	Spa	Steakhouse	Juice Bar	Theater	Seafood Restaurant
1	98102	Gym	Italian Restaurant†	Sporting Goods Shop	Trail	Spa	Bubble Tea Shop	Memorial Site	Food & Drink Shop	Boat or Ferry	Cemetery
2	98103	Park	Baseball Field	Dog Run	Theater	Harbor / Marina	Tennis Court	Golf Course	Electronics Store	Ethiopian Restaurant†	Event Space
3	98104	Chinese Restaurant	Coffee Shop	Café	Japanese Restaurant†	Tea Room	Sandwich Place	Scenic Lookout	Poke Place	Pizza Place	Bakery

Table 2

	Zip code	1st Least Common Venue	2nd Least Common Venue	3rd Least Common Venue	4th Least Common Venue	5th Least Common Venue	6th Least Common Venue	7th Least Common Venue	8th Least Common Venue	9th Least Common Venue	10th Least Common Venue
0	98101	ATM	Marijuana Dispensary	Market	Martial Arts Dojo	Memorial Site	Middle Eastern Restaurant	Mini Golf	Miscellaneous Shop	Mobile Phone Shop	Motel
1	98102	ATM	Miscellaneous Shop	Mobile Phone Shop	Motel	Movie Theater	Moving Target	Museum	Music Venue	Nature Preserve	Neighborhood
2	98103	ATM	Motel	Movie Theater	Moving Target	Museum	Music Venue	Nature Preserve	Neighborhood	New American Restaurant	Nightclub
3	98104	ATM	Memorial Site	Mexican Restaurant	Middle Eastern Restaurant	Mini Golf	Miscellaneous Shop	Mobile Phone Shop	Motel	Movie Theater	Moving Target



Discussion

- As it can be seen in the results, there are many kinds of business that are missing at all from all of the zip codes in Seattle. It would be required to make an exhaustive research to find out what could be the reasons for that kind of business to be missing and what are the chances in that zip code for that business to succeed.



Conclusion

- The location is an important factor in the success of a new business. This project has suggested the kind and location for new business to start in Seattle, WA zip codes by using the valuable location data provided by Foursquare site.



Thank you!

