

BATTLE OF THE NEIGHBOURHOODS-ASIAN DELICACIES IN SEATTLE

APPLIED DATA SCIENCE CAPSTONE

BY-
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INTRODUCTION

The problem to be addressed in this project is to find out the most popular neighbourhood in the city of Seattle to open an Asian Cuisine restaurant that would help the businessmen to make an informed decision.



DATA REQUIREMENTS

- To find the solution to our business problem it is imperative that we have plenty of data to analyse and recommend the optimal location for an Asian restaurant.
- To analyse and come up with a solution, we firstly need the latitudes and longitudes for all the neighbourhoods of the city of Seattle.
- Next we would find the restaurants that are there within a radius of around 500 feet of those location in order to establish similarity between the neighbourhoods.

DATA COLLECTION

- Seattlearea.com

Neighborhood Zipcodes

- » 98003 - Federal Way
- » 98005 - Bellevue
- » 98033 - Kirkland
- » 98037 - Lynnwood
- » 98040 - Mercer Island
- » 98052 - Redmond
- » 98055 - Renton
- » 98101 - Seattle
- » 98101 - Downtown
- » 98102 - Capital Hill
- » 98103 - Greenwood
- » 98103 - Fremont
- » 98103 - Greenlake

Geopy Library

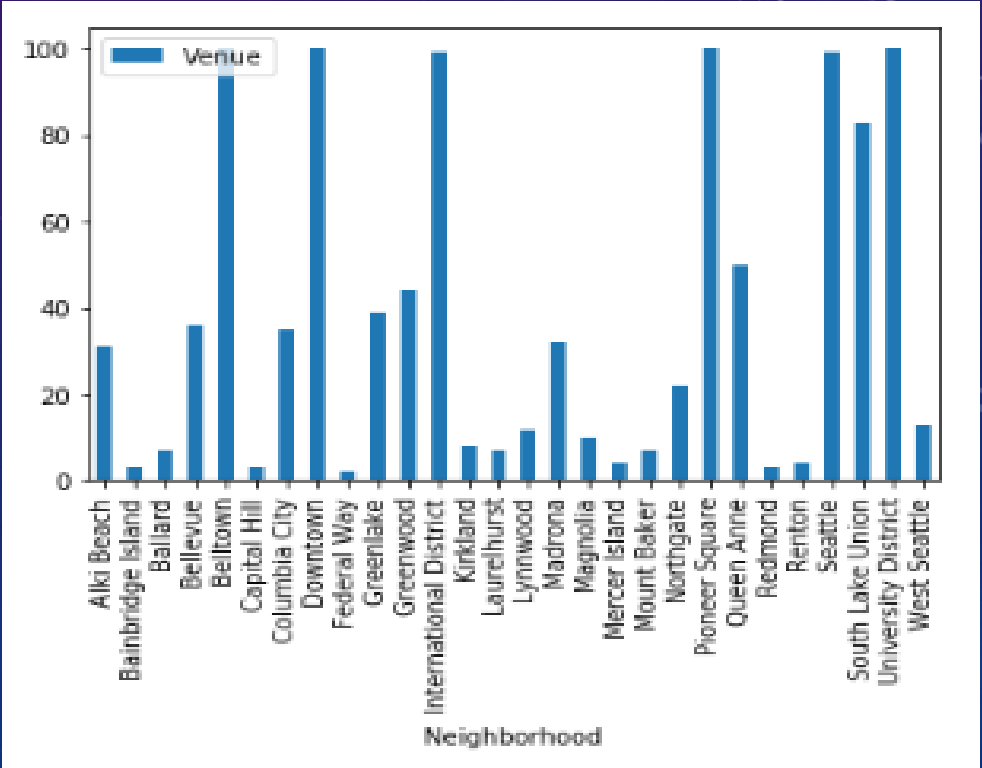
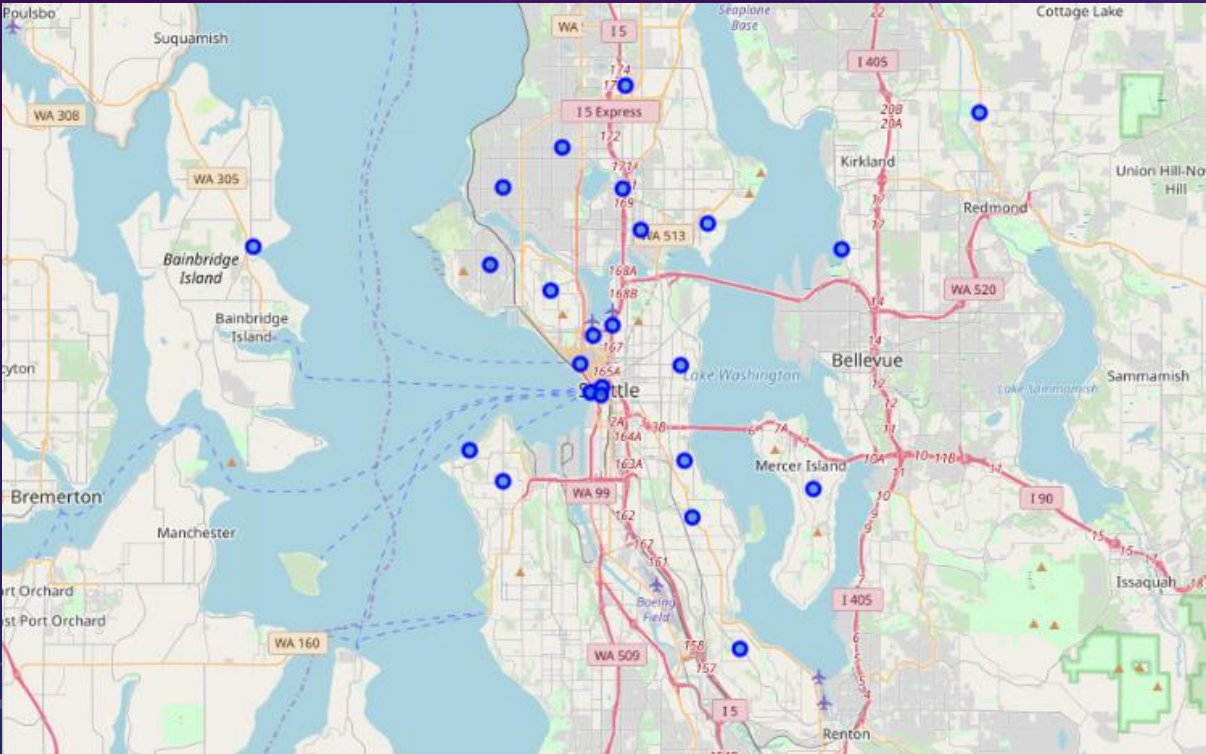
	PostalCode	Neighborhood	Latitude	Longitude
0	98003	Federal Way	47.295780	-122.325464
1	98005	Bellevue	47.627073	-122.327626
2	98033	Kirkland	47.654516	-122.205614
3	98037	Lynnwood	47.810375	-122.324020
4	98040	Mercer Island	47.568357	-122.220895
5	98052	Redmond	47.703507	-122.132372
6	98055	Renton	47.510732	-122.260317
7	98101	Seattle	47.602896	-122.339841
8	98101	Downtown	47.604949	-122.333274
9	98102	Capital Hill	47.669678	-121.098831
10	98103	Greenwood	47.690981	-122.354877
12	98103	Greenlake	47.676003	-122.322149
13	98104	International District	47.602896	-122.339841

Foursquare API

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Federal Way	47.295780	-122.325464	CrossFit Federal Way	47.298880	-122.323581	Gym
1	Federal Way	47.295780	-122.325464	Gymnastics Unlimited	47.296597	-122.319283	Gymnastics Gym
2	Bellevue	47.627073	-122.327626	Barjot	47.625701	-122.326748	Café
3	Bellevue	47.627073	-122.327626	Top Pot Doughnuts	47.624630	-122.325470	Donut Shop
4	Bellevue	47.627073	-122.327626	Harry's Fine Foods	47.624402	-122.326771	Restaurant
5	Bellevue	47.627073	-122.327626	Sol Liquor Lounge	47.624605	-122.325434	Cocktail Bar
6	Bellevue	47.627073	-122.327626	Single Shot	47.624688	-122.325431	American Restaurant
7	Bellevue	47.627073	-122.327626	The Lookout	47.626724	-122.326752	Bar
8	Bellevue	47.627073	-122.327626	Silver Cloud Inn Seattle - Lake Union	47.628610	-122.329098	Hotel
9	Bellevue	47.627073	-122.327626	Pro Sports Club	47.623538	-122.329503	Gym
10	Bellevue	47.627073	-122.327626	I Love Sushi	47.628939	-122.331844	Sushi Restaurant

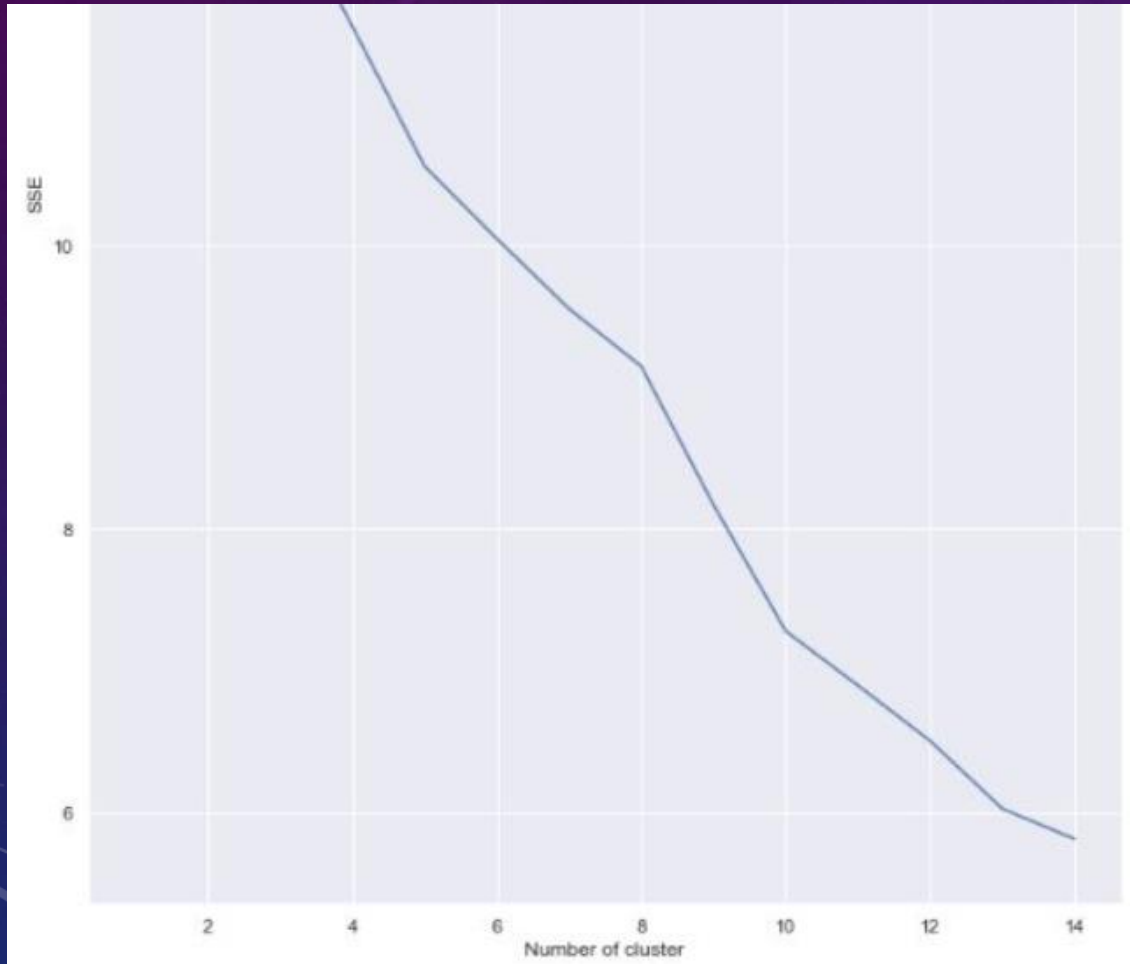
METHODOLOGY

Exploratory Analysis

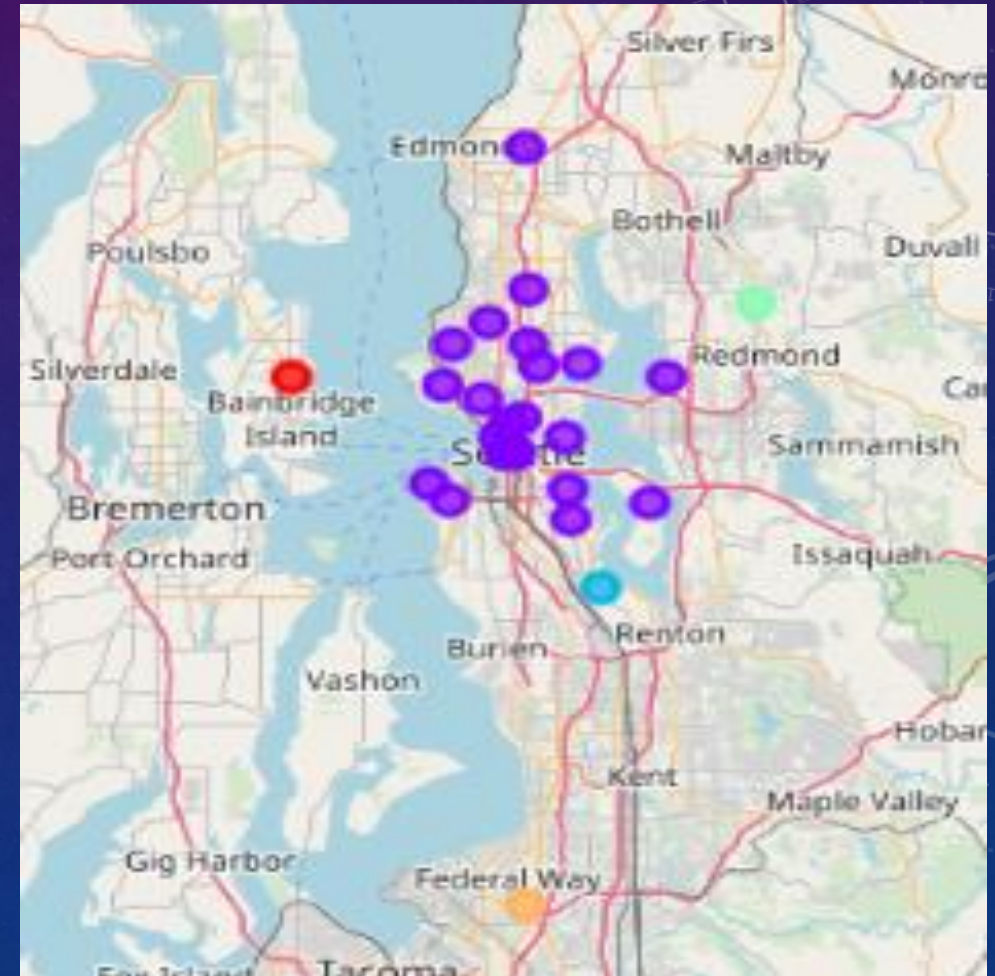


CLUSTER ANALYSIS

- K=5 using the following elbow graph –



Resulted in 4 clusters



RESULTS AND CONCLUSIONS

- The result of the project was that if businessman wants to open an Asian restaurant in the city of Seattle, the optimal location for that is the neighbourhood of **University district** due to the fact that it was in the cluster having number of Asian restaurants and had the most number of Asian Restaurants in its top 10 most common venue list.
- It seems reasonable as there seems a large cluster of international students and population in that area.
- Therefore, that might be the reason for them to have the most number of popular venues too due to a majority of youth population in that area.

	PostalCode	Neighborhood	Latitude	Longitude	Cluster Labels	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue
1	98005	Bellevue	47.627073	-122.327626	1	Bar	Hotel	Seafood Restaurant	Park	Restaurant	Harbor / Marina	Coffee Shop	Yoga Studio	Music Venue	Sushi Restaurant
2	98033	Kirkland	47.654516	-122.205614	1	Coffee Shop	Wine Bar	Hotel	French Restaurant	American Restaurant	Restaurant	Seafood Restaurant	Harbor / Marina	Falafel Restaurant	Electronics Store
3	98037	Lynnwood	47.810375	-122.324020	1	Korean Restaurant	Mexican Restaurant	Latin American Restaurant	Bar	Donut Shop	BBQ Joint	Pharmacy	Greek Restaurant	Japanese Restaurant	Warehouse Store
4	98040	Mercer Island	47.568357	-122.220895	1	Park	Stadium	Playground	Track Stadium	Eastern European Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Falafel Restaurant
7	98101	Seattle	47.602896	-122.339841	1	Seafood Restaurant	Coffee Shop	Gift Shop	Boat or Ferry	Park	New American Restaurant	Theme Park Ride / Attraction	Pier	Bar	Café
8	98101	Downtown	47.604949	-122.333274	1	Hotel	Coffee Shop	New American Restaurant	Seafood Restaurant	Cocktail Bar	Café	Korean Restaurant	Italian Restaurant	Scenic Lookout	Breakfast Spot
9	98102	Capital Hill	47.609678	121.098831	1	Dim Sum Restaurant	Pizza Place	Basketball Court	Women's Store	Electronics Store	Food Truck	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant
10	98103	Greenwood	47.690981	-122.354877	1	Coffee Shop	Bar	Mexican Restaurant	Pizza Place	Theater	Spa	Mediterranean Restaurant	Cheese Shop	Bridal Shop	Brewery
12	98103	Greenlake	47.676003	-122.322149	1	Coffee Shop	Spa	Vegetarian / Vegan Restaurant	Burger Joint	Yoga Studio	Electronics Store	Frozen Yogurt Shop	Thai Restaurant	Salon / Barbershop	Organic Grocery
13	98104	International District	47.602896	-122.339841	1	Seafood Restaurant	Coffee Shop	Gift Shop	Boat or Ferry	Park	New American Restaurant	Theme Park Ride / Attraction	Pier	Bar	Café
14	98104	Pioneer Square	47.602139	-122.333927	1	Coffee Shop	Cocktail Bar	Café	Hotel	Seafood Restaurant	Donut Shop	Italian Restaurant	Salad Place	Indian Restaurant	Gift Shop
15	98105	University District	47.661298	-122.313152	1	Coffee Shop	Chinese Restaurant	Sandwich Place	Bubble Tea Shop	Café	Korean Restaurant	Indian Restaurant	Thrift / Vintage Store	Asian Restaurant	Mexican Restaurant

The background is a gradient of dark blue to purple, speckled with small white dots resembling stars. Overlaid on this are several faint, white geometric patterns. In the top right, there is a large circular scale with degree markings from 0 to 210 and concentric circles. In the bottom right, there are concentric circles with dashed lines and arrows indicating a clockwise direction. In the bottom left, there are also concentric circles with dashed lines and arrows. In the top left, there is a small circular pattern with a dashed line and an arrow.

Thank you