

CAPSTONE – NEIGHBOURHOODS

LOCATION: SEATTLE, WASHINGTON

- SHANTHA





ELEMENTS



Project
Description



Data Analysis



Reports

PROJECT DESCRIPTION

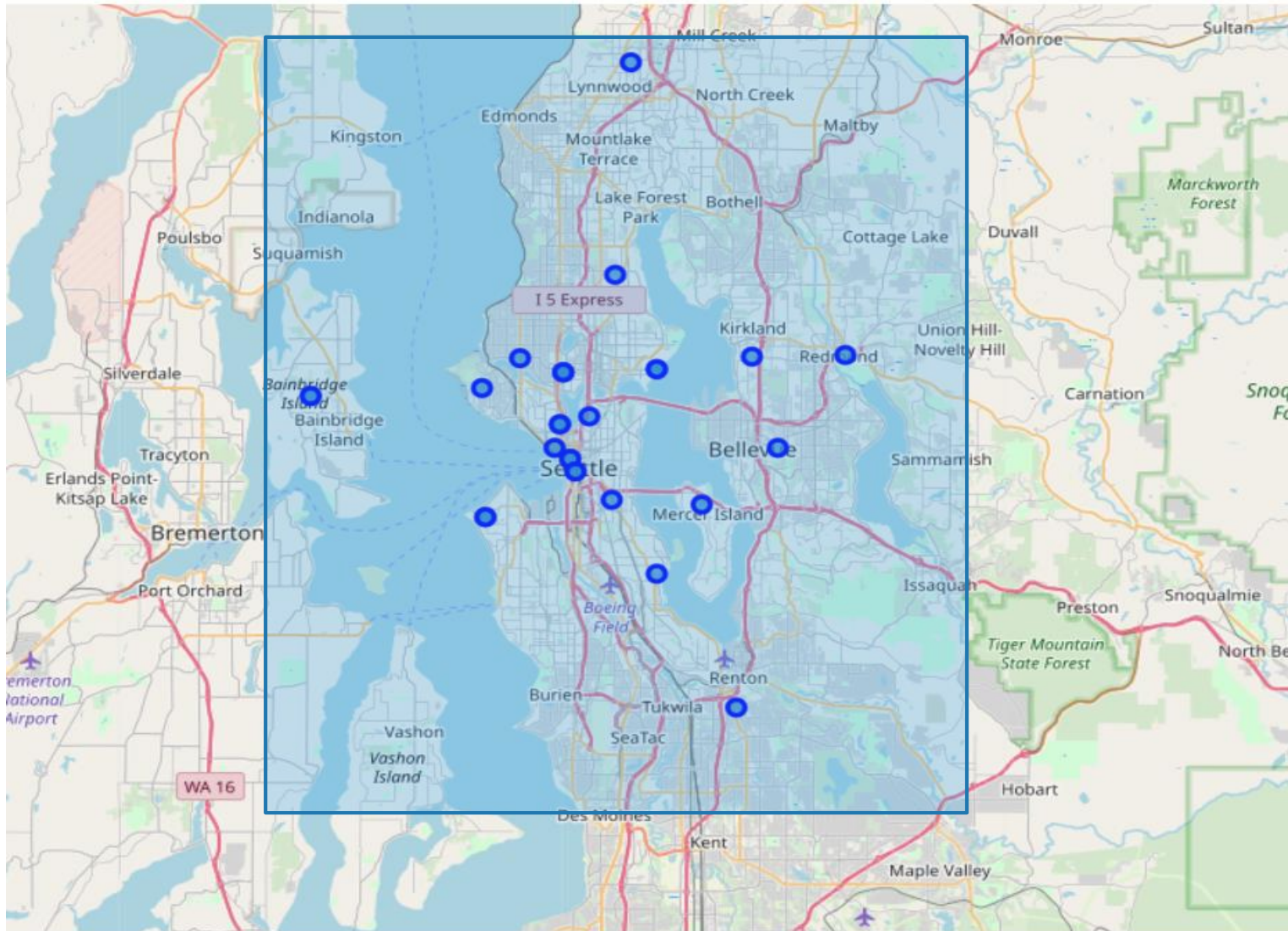
- THE OBJECTIVE OF THIS CAPSTONE IS TO COLLECTS VARIOUS DATA POINTS FROM SEATTLE, WASHINGTON AS THE REQUIREMENTS AND MAIN IDEA TO HELP THE STAKE HOLDERS TO ACHIEVE THE DESIRED RESULTS, SO AS TO HELP THEM SPEND THEIR VALUABLE TIME AND MONEY IN SOME OTHER PRODUCTIVE MEANS RATHER KEEP THEM TRAPPED IN AN INFINITE LOOP OF EXTENSIVE SEARCH ENGINES UNNECESSARILY.
- THIS PROJECT WOULD HELP THEM TO TAKE THE DECISION ON CHOOSING THE BEST NEIGHBOURHOOD FROM OUT OF MANY NEIGHBOURHOODS. LIKE: BUILD/BUY THEIR HOUSES IN THE CITY BASED ON THE DISTRIBUTION OF VARIOUS FACILITIES.
- WE'RE USING K-MEAN CLUSTERING UNSUPERVISED MACHINE LEARNING ALGORITHM TO CLUSTER THE VENUES BASED ON THE PLACE CATEGORY
 - RESTAURANTS
 - PARK
 - COFFEE SHOP
 - GYM ETC.
- THIS WOULD GIVE A BETTER UNDERSTANDING OF THE SIMILARITIES AND DISSIMILARITIES BETWEEN THE TWO CHOSEN NEIGHBOURHOODS TO RETRIEVE MORE INSIGHTS AND TO CONCLUDE WITH EASE WHICH NEIGHBOURHOOD WINS OVER OTHER.
- HERE WE'RE GOING TO COMPARE TWO NEIGHBORHOODS TO CHOOSE ONE THAT BEST MATCHES BASED ON THE BELOW FACTORS
 - HOUSING PRICE
 - POPULATION
 - SCHOOL RATING
 - COMFORTABLE NEIGHBORHOODS

PROJECT - DEPENDENCIES

- KEY PACKAGES AND DEPENDENCIES FOR THE IMPLEMENTATION:
 - FOURSQUARE API
 - GEOPY – TO RETRIEVE LOCATION DATA
 - REQUESTS – LIBRARY TO HANDLE HTTP REQUESTS
 - JSON – LIBRARY TO HANDLE JSON FILES
 - FOLIUM – MAP RENDERING LIBRARY
 - PANDAS
 - **LIBRARY FOR DATA ANALYSIS**
 - **NUMPY – LIBRARY TO HANDLE DATA IN A VISUALIZATION**
 - **MATPLOTLIB – PYTHON PLOTTING MODULE**
 - **SKLEARN – PYTHON MACHINE LEARNING LIBRARY**

| | Neighborhood | PostalCode | Latitude | Longitude |
|----|------------------------|------------|-----------|-------------|
| 0 | Federal Way | 98003 | 47.316504 | -122.322397 |
| 1 | Bellevue | 98005 | 47.615044 | -122.171758 |
| 2 | Kirkland | 98033 | 47.668830 | -122.192387 |
| 3 | Lynnwood | 98037 | 47.841952 | -122.288181 |
| 4 | Mercer Island | 98040 | 47.582423 | -122.233123 |
| 5 | Redmond | 98052 | 47.670119 | -122.118237 |
| 6 | Renton | 98055 | 47.462337 | -122.205506 |
| 7 | Seattle | 98101 | 47.608492 | -122.336407 |
| 8 | Downtown | 98101 | 47.608492 | -122.336407 |
| 9 | Capital Hill | 98102 | 47.633822 | -122.321545 |
| 10 | Greenwood | 98103 | 47.660009 | -122.342557 |
| 11 | Freemont | 98103 | 47.660009 | -122.342557 |
| 12 | Greenlake | 98103 | 47.660009 | -122.342557 |
| 13 | International District | 98104 | 47.601557 | -122.332335 |
| 14 | Pioneer Square | 98104 | 47.601557 | -122.332335 |
| 15 | University District | 98105 | 47.661424 | -122.268374 |
| 16 | Laurelhurst | 98105 | 47.661424 | -122.268374 |
| 17 | Ballard | 98107 | 47.668360 | -122.376958 |
| 18 | South | 98109 | 47.628859 | -122.345692 |
| 19 | Queen Anne | 98109 | 47.628859 | -122.345692 |
| 20 | Bainbridge Island | 98110 | 47.645833 | -122.543441 |
| 21 | Madrona | 98110 | 47.645833 | -122.543441 |
| 22 | West Seattle | 98116 | 47.574580 | -122.404784 |
| 23 | Alki Beach | 98116 | 47.574580 | -122.404784 |
| 24 | Columbia City | 98118 | 47.541202 | -122.267563 |
| 25 | Belltown | 98121 | 47.615247 | -122.349745 |
| 26 | Northgate | 98125 | 47.717020 | -122.300934 |
| 27 | Mount Baker | 98144 | 47.584576 | -122.303649 |
| 28 | Magnolia | 98199 | 47.650708 | -122.406786 |

SEATTLE, WASHINGTON - NEIGHBORHOODS ALONG WITH LATITUDE AND LONGITUDE



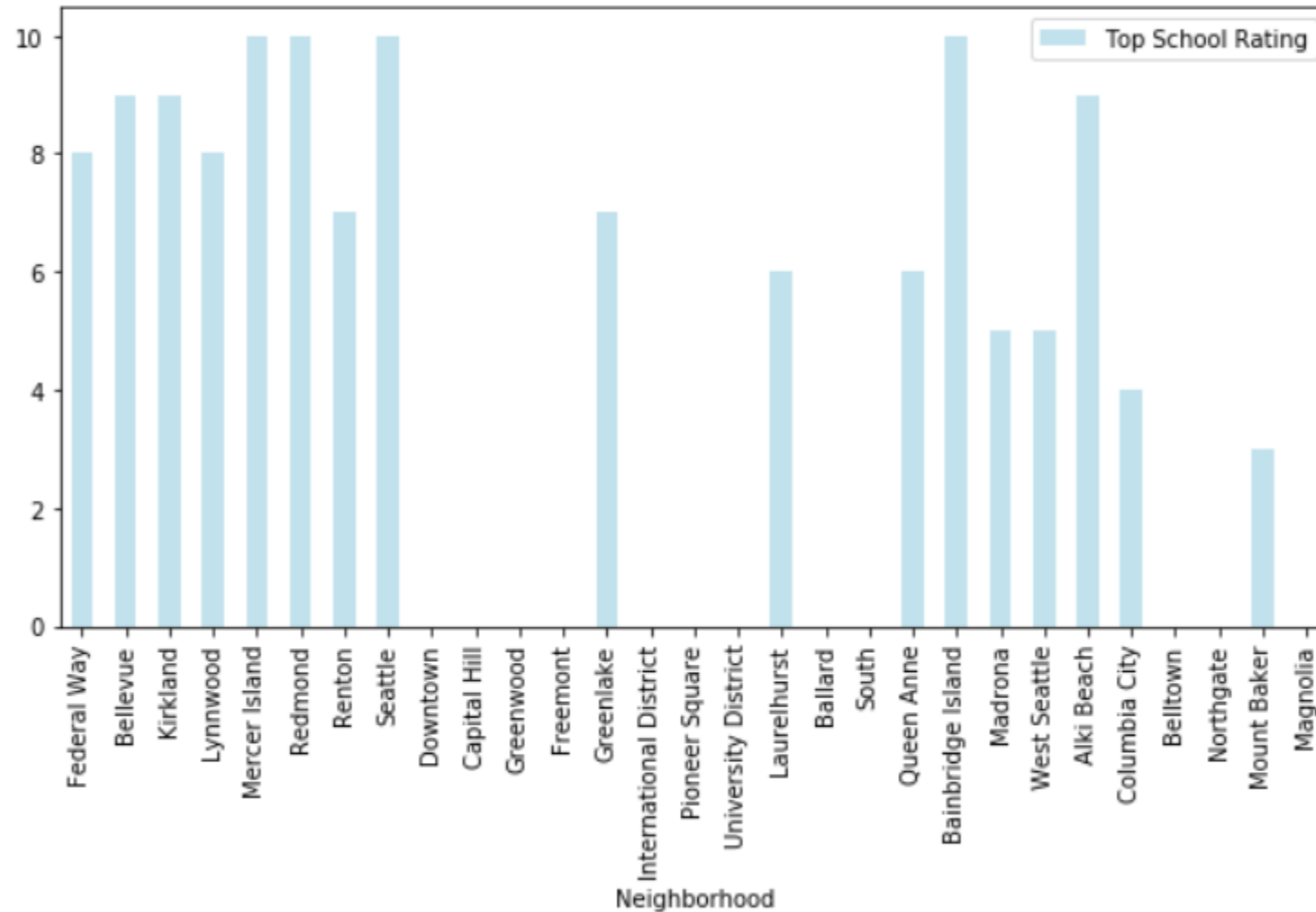
SEATTLE, WASHINGTON
- NEIGHBORHOODS IN
CLUSTER FORM USING
FOLIUM

| | Neighborhood | 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 | Alki Beach | Park | Coffee Shop | Ice Cream Shop | Italian Restaurant | Thai Restaurant | Pizza Place | Beach | Beach Bar | Brewery | Seafood Restaurant |
| 1 | Bainbridge Island | Tree | Ethiopian Restaurant | Forest | Food Truck | Food Stand | Flower Shop | Fish Market | Fish & Chips Shop | Filipino Restaurant | Fast Food Restaurant |
| 2 | Ballard | Coffee Shop | Brewery | New American Restaurant | Sandwich Place | Sushi Restaurant | Mexican Restaurant | Ice Cream Shop | Bar | Pizza Place | Cocktail Bar |
| 3 | Bellevue | Insurance Office | Auto Garage | Mexican Restaurant | Other Repair Shop | Deli / Bodega | Coffee Shop | Spa | Bagel Shop | Automotive Shop | Indian Restaurant |
| 4 | Belltown | Bar | Sushi Restaurant | Coffee Shop | Pizza Place | Vietnamese Restaurant | Sculpture Garden | Movie Theater | Breakfast Spot | Gym | Italian Restaurant |

| White | Black | Hispanic | Asian | Hawaiian | Indian |
|-------|-------|----------|-------|----------|--------|
| 62408 | 7001 | 6514 | 10836 | 875 | 783 |
| 12065 | 547 | 1213 | 5012 | 74 | 157 |
| 29436 | 696 | 1667 | 4484 | 180 | 366 |
| 18512 | 1642 | 2544 | 6040 | 333 | 599 |
| 18494 | 407 | 634 | 4279 | 84 | 169 |

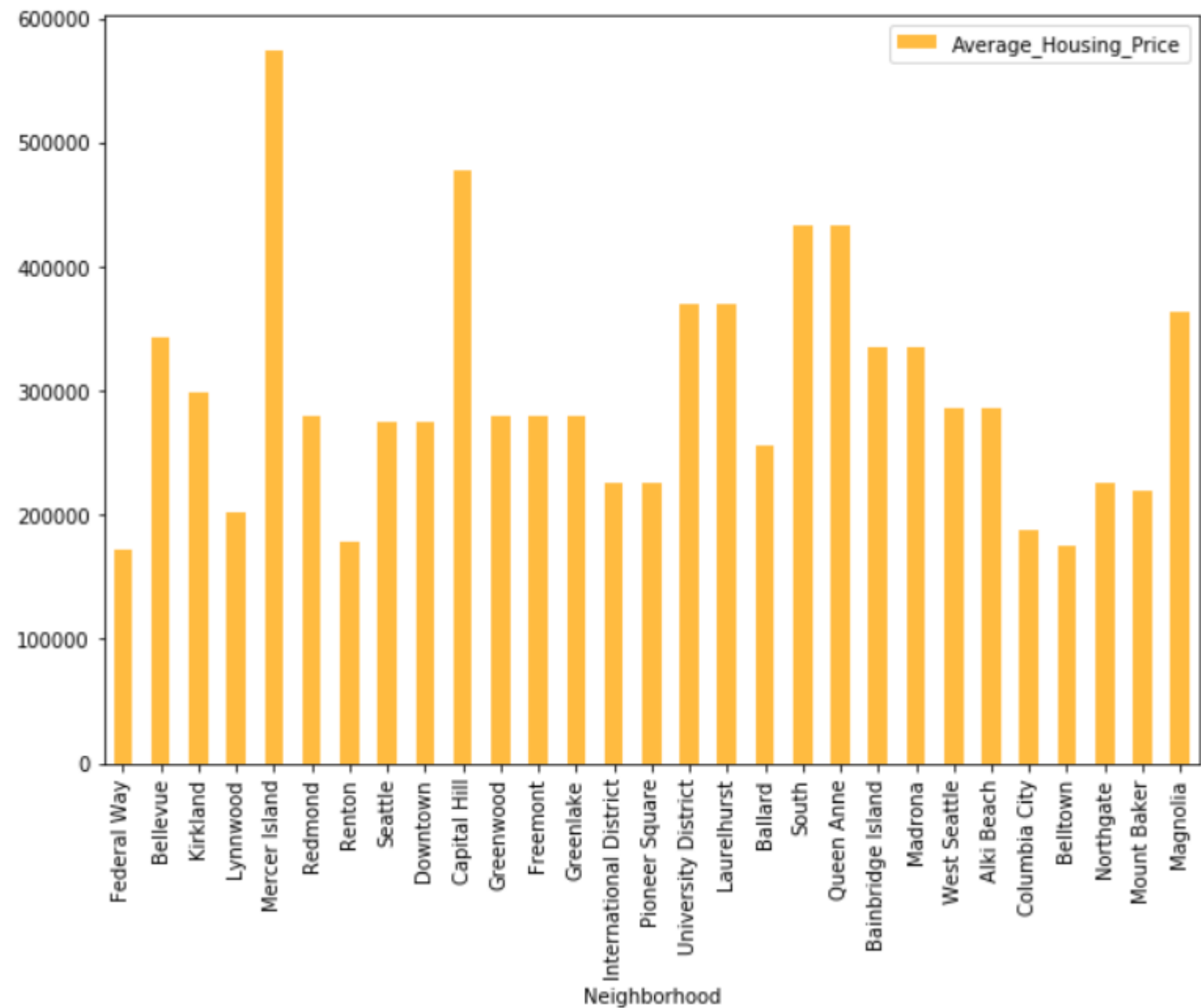
SEATTLE, WASHINGTON -
NEIGHBORHOODS MOST
COMMON VENUES AND
POPULATION

Neighborhood - School Rating



SEATTLE, WASHINGTON - NEIGHBORHOODS SCHOOL RATING

House Pricing



SEATTLE, WASHINGTON
- NEIGHBORHOODS
HOUSE PRICING



THANKS!