

CAPSTONE PROJECT - THE POSSIBLE COVID-19 OUTBREAK DISTRICTS IN SEATTLE

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INTRODUCTION



DATA

Central Seattle

- Belltown
- Broadmoor
- Capitol Hill
- Central District
- Denny-Blaine
- Downtown
- Eastlake
- First Hill
- International District
- Leschi
- Madison Park
- Madison Valley
- Madrona
- Montlake
- Pioneer Square
- South Lake Union

Northeast Seattle

- Bryant
- Hawthorne Hills
- Lake City
- Laurelhurst
- Maple Leaf
- Matthews Beach
- Northgate
- Ravenna
- Roosevelt
- U-District
- View Ridge
- Wedgwood
- Windermere

Northwest Seattle

- Ballard
- Blue Ridge/North Beach
- Broadview
- Crown Hill
- Fremont
- Green Lake
- Greenwood
- Haller Lake
- Loyal Heights
- Magnolia
- Phinney Ridge
- Queen Anne
- Wallingford
- Westlake
- Whittier Heights

South Seattle

- Beacon Hill
- Columbia City
- Georgetown
- Mount Baker
- Rainier Beach
- Seward Park
- South Park

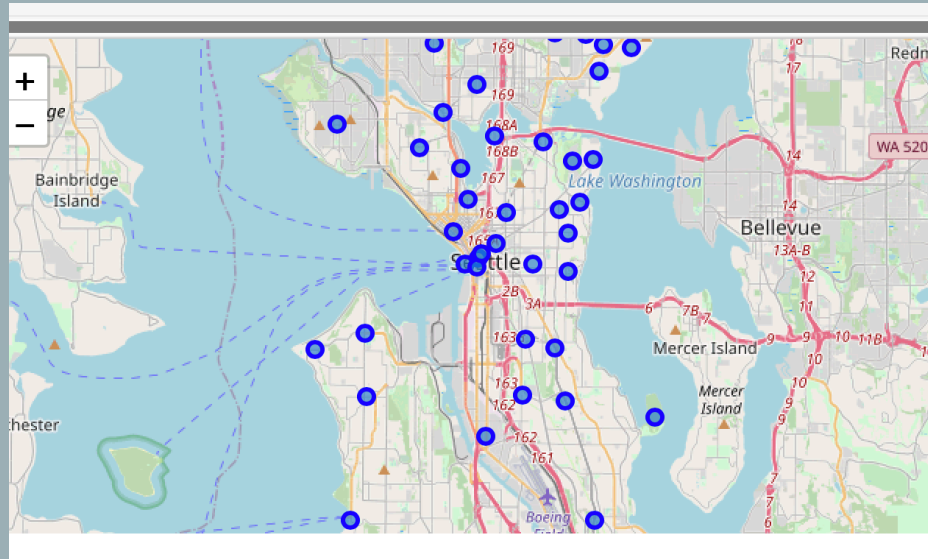
West Seattle

- Admiral
- Alki
- Fauntleroy
- Junction

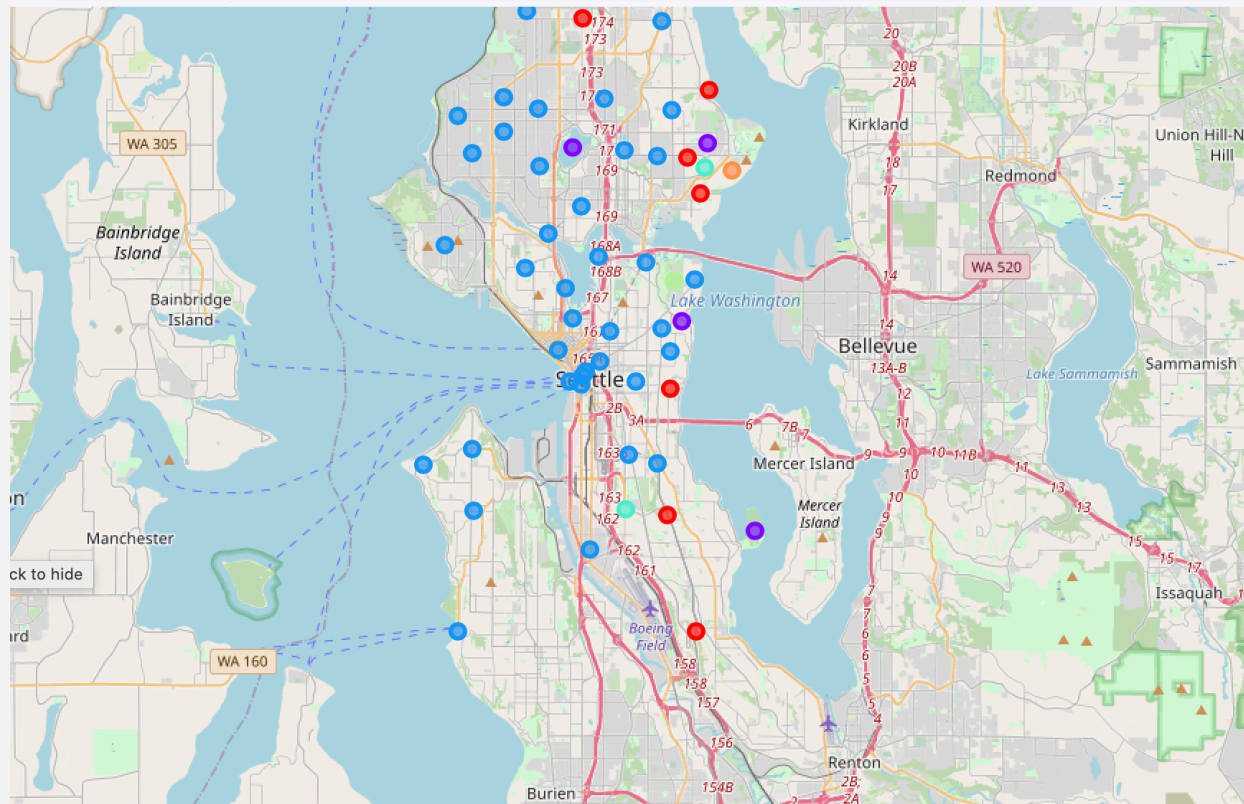
GENERATE COORDINATE FOR ALL DISTRICTS

| | district | neighborhood | Latitude | Longitude |
|----|------------------------|-----------------|-----------|-------------|
| 0 | Belltown | Central Seattle | 47.613231 | -122.345361 |
| 1 | Broadmoor | Central Seattle | 47.635170 | -122.289711 |
| 2 | Capitol Hill | Central Seattle | 47.619004 | -122.320215 |
| 3 | Central District | Central Seattle | 47.603110 | -122.308270 |
| 4 | Denny-Blaine | Central Seattle | 47.622327 | -122.285985 |
| 5 | Downtown | Central Seattle | 47.604949 | -122.333274 |
| 6 | Eastlake | Central Seattle | 47.643145 | -122.326172 |
| 7 | First Hill | Central Seattle | 47.609305 | -122.324984 |
| 8 | International District | Central Seattle | 47.602896 | -122.339841 |
| 9 | Leschi | Central Seattle | 47.600535 | -122.291866 |
| 10 | Madison Park | Central Seattle | 47.635930 | -122.280196 |
| 11 | Madison Valley | Central Seattle | 47.619916 | -122.295614 |
| 12 | Madrona | Central Seattle | 47.612792 | -122.291226 |

MAP SEATTLE



CLUSTERING



RESULT

5. Results

The resulting clusters are as follow :

- Cluster 1 - low probility district
- Cluster 2 - low probility district
- Cluster 3 - High probility district
- Cluster 4 - moderate probility district
- Cluster 5 - low probility district
- Cluster 6 - low probility district

CONCLUSION

- From the result, Cluster 3 has the most density of cafe shop and resturants **Therefore, Cluster 3 has the highest potential to have the covid-19 outbreak.**

Cluster 3 - high probability districts.

```
n [77]: district_merged.loc[district_merged['Cluster Labels'] == 2, district_merged.columns[[1] + [2] + list(range(5, district_merged.shape[1])]]
```

Out[77]:

[illegible]