

Moving from large to small city: Big difference?

Machine Learning Analysis of Neighborhoods

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The Problem:

When we are faced new job opportunities we often are hesitant because moving could be complicated and we don't know if much about new city

Solution: Lets Compare neighborhoods between our city and one we are moving to

Alexandria, VA vs Kalamazoo, MI

Two cities one large one small are chosen at random for the analysis

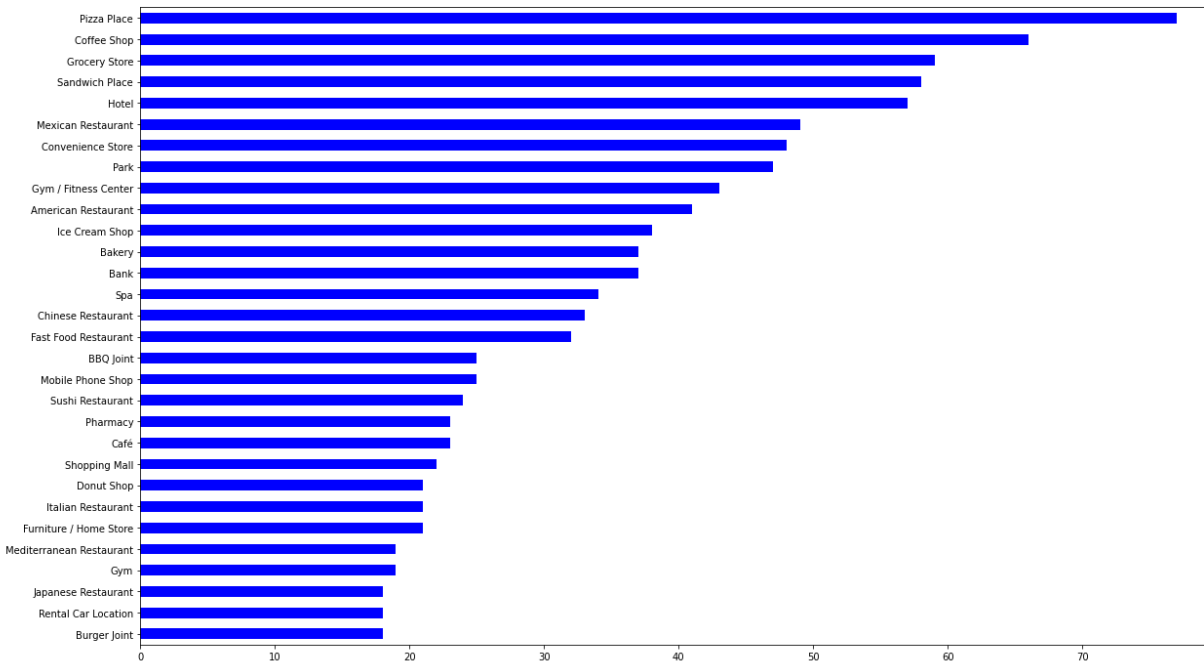
Data

- List of neighborhoods postal codes
- Latitudes and longitudes for each neighborhood
- FourSquare API to obtain information about nearby venues
- Geopy package to visualize the neighborhoods

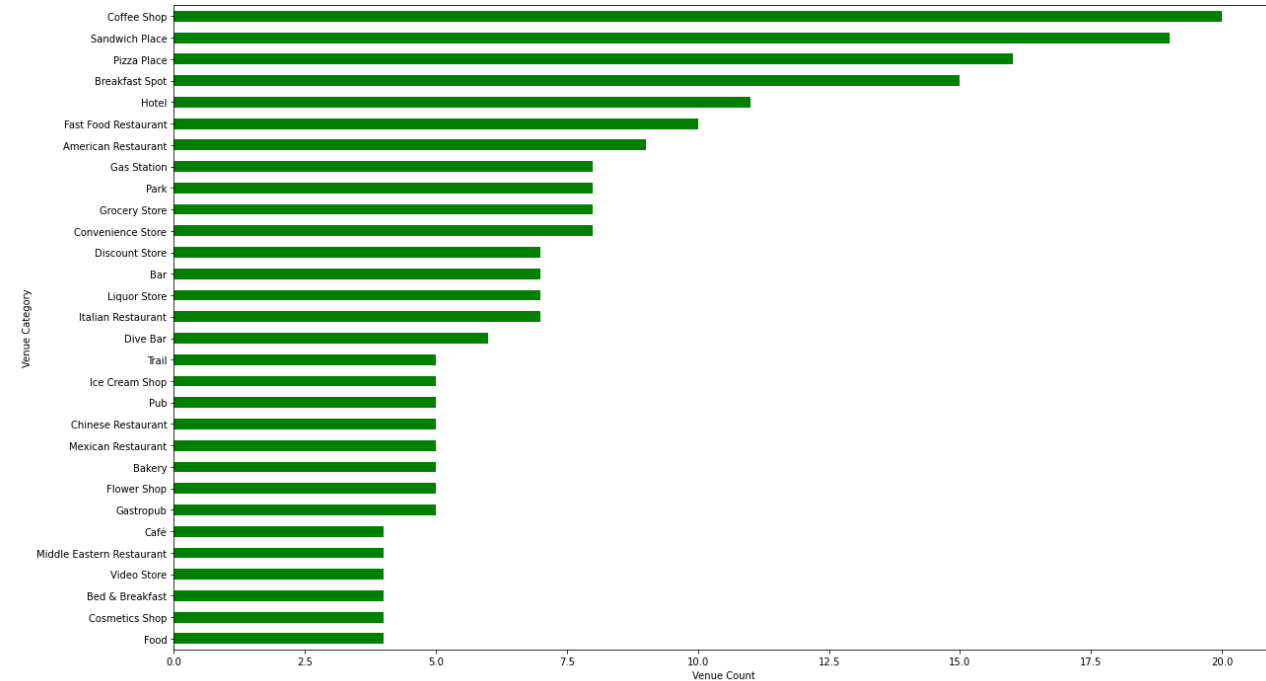
Method

- To compare neighborhoods we are going to use unsupervised k-means machine learning method that clusters neighborhoods based on similar characteristics

Most popular venues in Alexandria and Kalamazoo



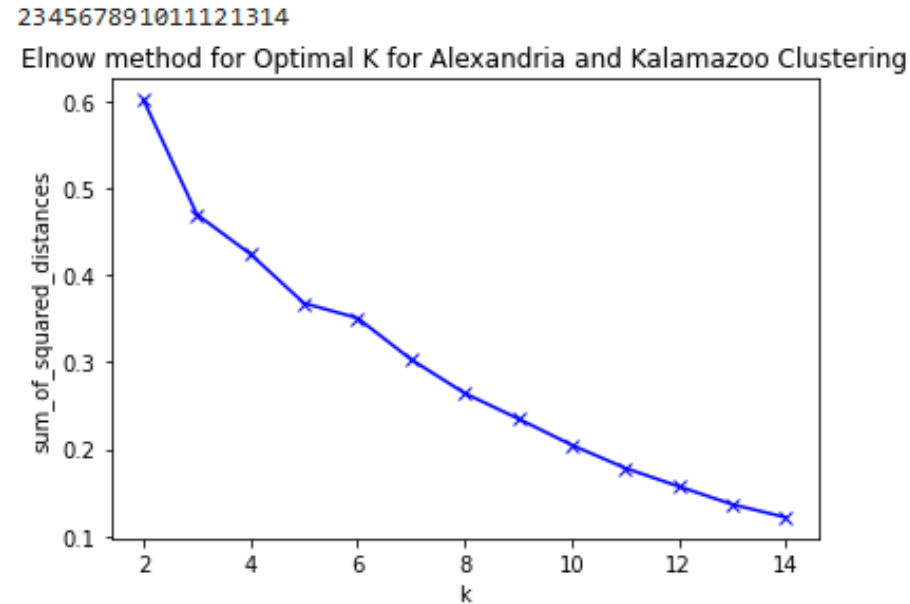
Alexandria



Kalamazoo

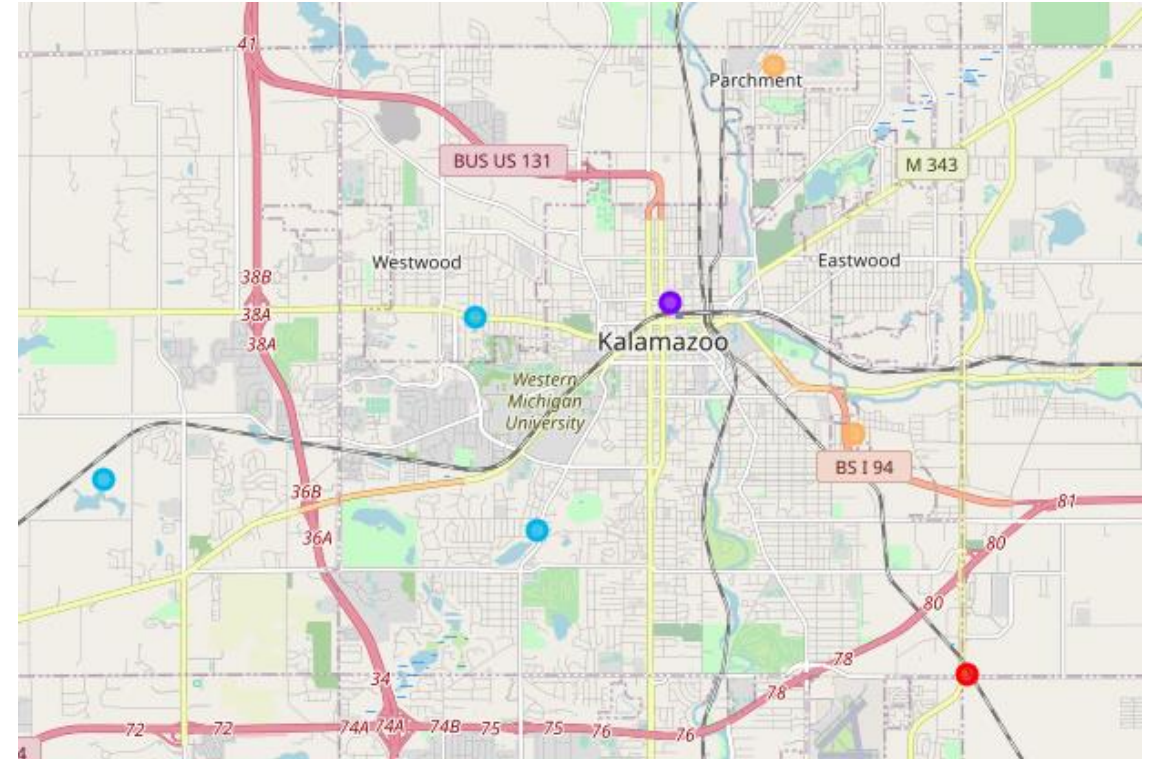
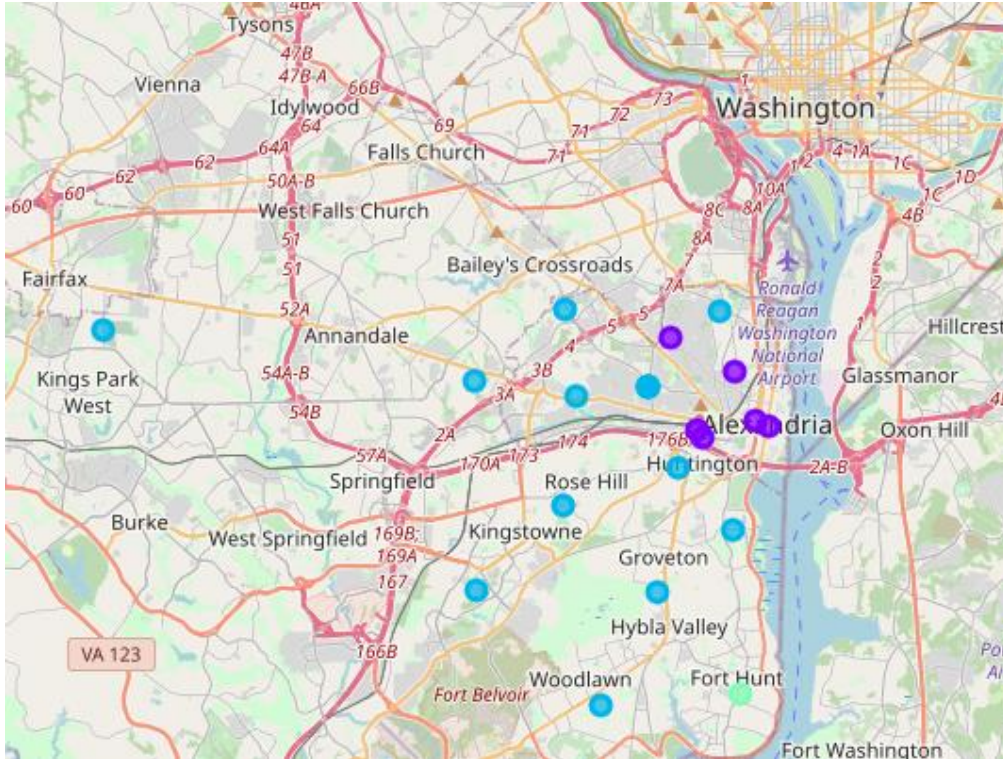
- Top Venues are similar in both cities
- Alexandria has about 4 times more total number of venues

K-Means: Elbow Method



Where elbow bends is optimal number of clusters. Perhaps 5 is a good number here

Clustering Results



- Only two clusters are presents at both cities: Purple and Light blue
- Purple – Downtown with lots of café / restaurants and hotels
- Light Blue – Residential area with casual food and grocery stores

Observations

- Both Alexandria and Kalamazoo have similar venues popularity – Good news
- Alexandria has many more venues than Kalamazoo – Could be a concern
- Recommendation to consider moving to downtown area first to compensate for difference in number of venues
- Should consider exploring other metrics such as crime rate housing cost and schools districts in addition to venues.