STONA YOGA IN SEATTLE, WASHINGTON

Anel Button

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1. Introduction

1.1 Background

"If you do what you love, you'll never work a day in your life", this famous quote by Marc Anthony is the inspiration for this report. An experienced yoga teacher and part time marijuana smoker has decided to combine her two loves and open a Stona Yoga studio in Seattle, Washington (for the purpose of this report, we will refer to her as Mary Jane or MJ). A Stona Yoga studio is similar to a regular yoga studio with the difference being that before class in a Stona Yoga studio, the teacher and students smoke and share a joint. Sharing a joint before a class can help build community and alleviate anxieties for newcomers and the more socially cautious individuals.

According to Health Europa and the Medical Cannabis Network [1] some of the health benefits of smoking cannabis include increased lung capacity, regulation and prevention of diabetes, helps with weight loss, relieves depression and anxiety as well as aids in inflammatory conditions. A benefit of adding cannabis to the yoga practice is an increased mind-body-breath connection, this allows people to have a deeper experience [2]. Cannabis also relaxes the body and helps you to feel less pain, allowing deeper stretching.

Because cannabis is a controlled substance, a Stona Yoga studio can only be opened in an area where cannabis is legalized for recreational use. The recreational use of marijuana in Washington state has been legal since 2012.

1.2 Problem

Mary Jane wants to asses the feasibility of opening a Stona Yoga studio in the northern and central areas of Seattle, Washington and find out which neighborhood would be the best place to do so.

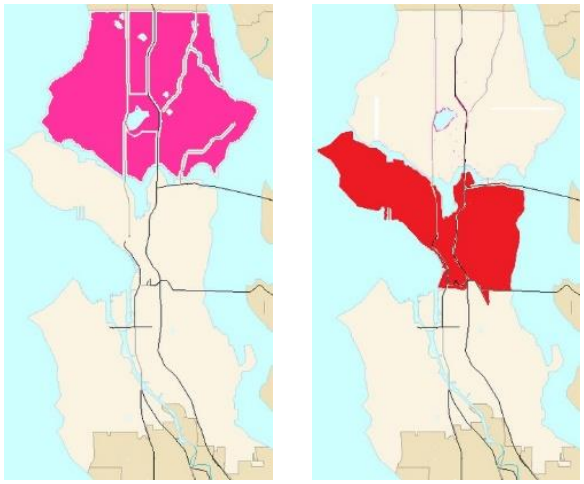

Figure 1: North (left) and Central (right) Seattle [3]

1.3 Interest

This report and the research contained within it is mainly aimed at Mary Jane to assist her in deciding whether to open up a Stona Yoga studio in Seattle, Washington and to point out the best neighborhood for her business. This report can also provide information to prospective business owners in the marijuana or fitness industries.

2. Data Gathering and Cleaning

2.1 Data Sources

A list of all the neighborhoods in Seattle can be found [4]. This list is used as the basis for neighborhood analysis. From this list, the northern and central neighborhoods will be extracted as these are the areas to which Mary Jane has the easiest accessibility.

Once a list of the northern and central neighborhoods of Seattle are available, the coordinates for each neighborhood will be gathered using the Geopy library in Python. "Geopy makes it easy for Python developers to locate the coordinates of addresses, cities, countries, and landmarks across the globe using third-party geocoders and other data sources." [5]

From here the list of neighborhoods, with their coordinates, will be used to pull location data from Foursquare. Foursquare is an "independent location data platform for understanding how people move through the real world" [6]. The location data provided by foursquare will help to analyse the different neighborhoods and determine if and where the most feasible spot is for Mary Jane's Stona Yoga studio.

2.2 Data Cleaning

2.2.1 Neighborhood Data

When initially imported from the link above, the list of neighborhoods in Seattle, contained special characters, numerical values and different formats for the same district. The data in the list was cleaned to remove special characters (", {, [], /, etc.), to standardise district names and remove numerical values.

	Neighborhood	District
0	Broadview	North Seattle
1	Bitter Lake	North Seattle
2	North Beach	North Seattle
3	Crown Hill	North Seattle
4	Greenwood	North Seattle
5	Northgate	North Seattle
6	Haller Lake	Northgate
7	Pinehurst	Northgate

Figure 2: List of Neighborhoods in North and Central Seattle

2.2.2 Geographical Data

The dataframe in figure 2, was used to pull each neighborhood's coordinates using Geopy. The dataframe was updated to include the coordinates in two new columns, 'Latitude' and 'Longitude'.

Geopy could not find the coordinates for 2 neighborhoods of the 43 neighborhoods. It was decided to drop these neighbourhoods and only work with the resulting 41 neighborhoods.

An example of the resulting data frame can be found in figure 3 below:

	Neighborhood	District	Latitude	Longitude
0	Broadview	North Seattle	47.722320	-122.360407
1	Bitter Lake	North Seattle	47.726236	-122.348764
2	North Beach	North Seattle	47.696210	-122.392362
3	Crown Hill	North Seattle	47.694715	-122.371459
4	Greenwood	North Seattle	47.690981	-122.354877
5	Northgate	North Seattle	47.713153	-122.321231

Figure 3: North and Central Seattle Neighborhoods with Coordinates

2.2.3 Location Data

Because neighborhoods aren't the same size, duplicate venues will show up in different neighborhoods where the constant radius, for which location data is searched, overlaps. To work past this, the neighborhoods will be clustered together into 25 clusters. See the figure below for a map of north and central Seattle, first with the neighborhoods superimposed on it and secondly with the clusters superimposed. From figure 4 it is clear that the clusters are more evenly spaced out and will result in less duplicate venues, given a set radius.

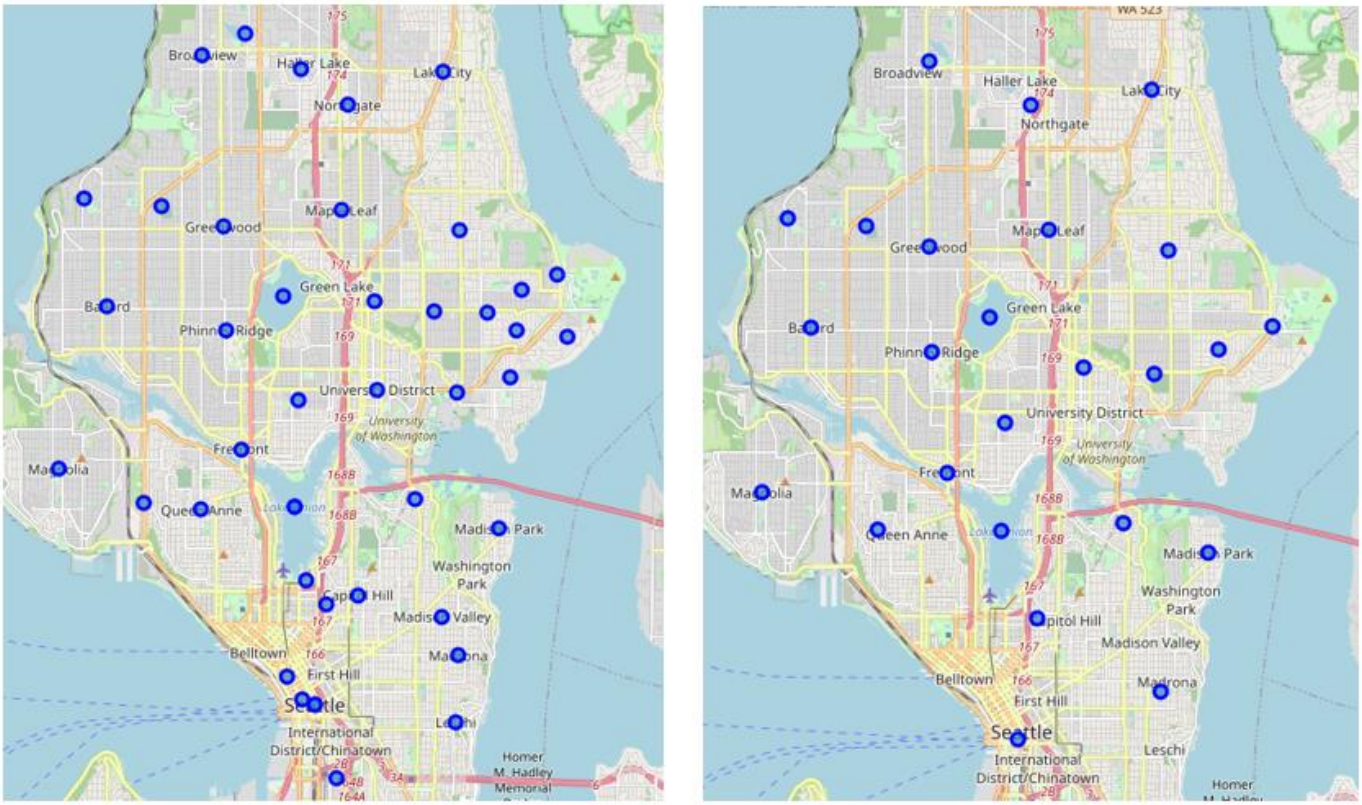

Figure 4: Neighborhoods (left) vs Clusters (right)

The dataframe with the clusters' information will be used to pull location data from Foursquare, focussing on yoga studios already available in each cluster. Once this information is available, each cluster will be analysed in more depth.