

Analysing the Best Location for Recyclable Single-Use Tableware Startups in San Jose vs New York

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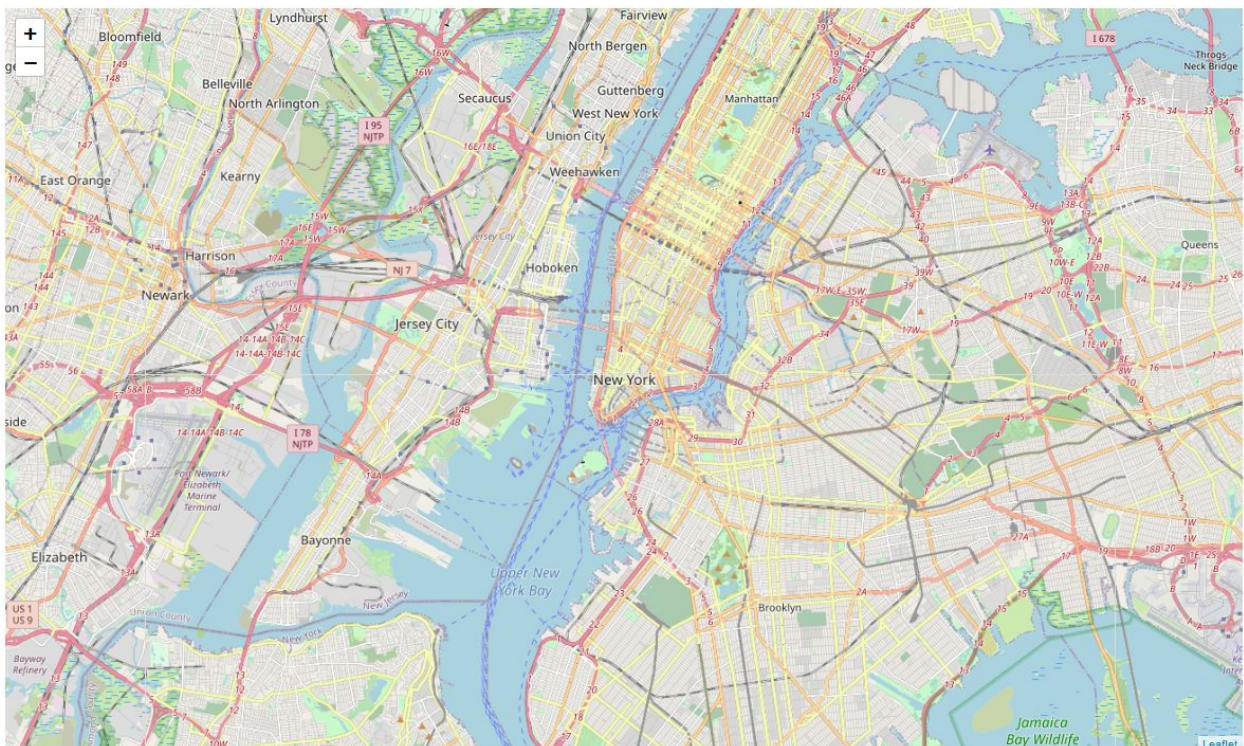
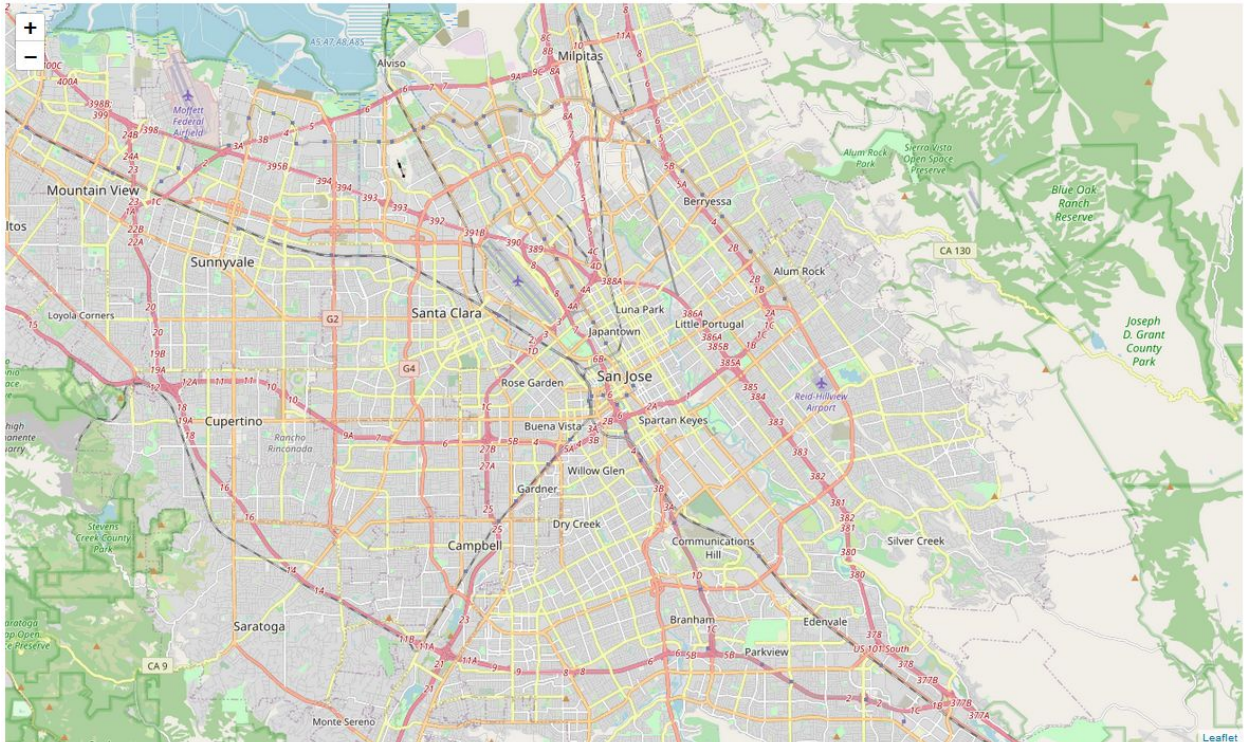
1. Introduction

Recyclable and green products are superior in terms of environmental friendliness to the usual plastic tablewares that are usually used in places that serve food. Greener cups and straws also offer a method of advertisement, as while some may not care about the environment, most would likely appreciate that a small effort hundreds of times becomes a big effort towards helping the environment. Given all that, where would be the best location for a startup that would be concerned with recyclable tableware? Narrowed down to two cities, let San Jose and New York be chosen. San Jose because of its proximity to the 'Silicon Valley' area, famous for technological startups and where there would likely be many wanting to go green, and New York City, due to it being the most populated city in the United States. Between these two cities, it would be beneficial to find where the biggest cluster of restaurants and coffee shops are after clustering the restaurants, and in the middle of the biggest cluster placing the startup, to be able to quickly provide green cups to the nearby locations at a lower cost to both the startup and the shop.

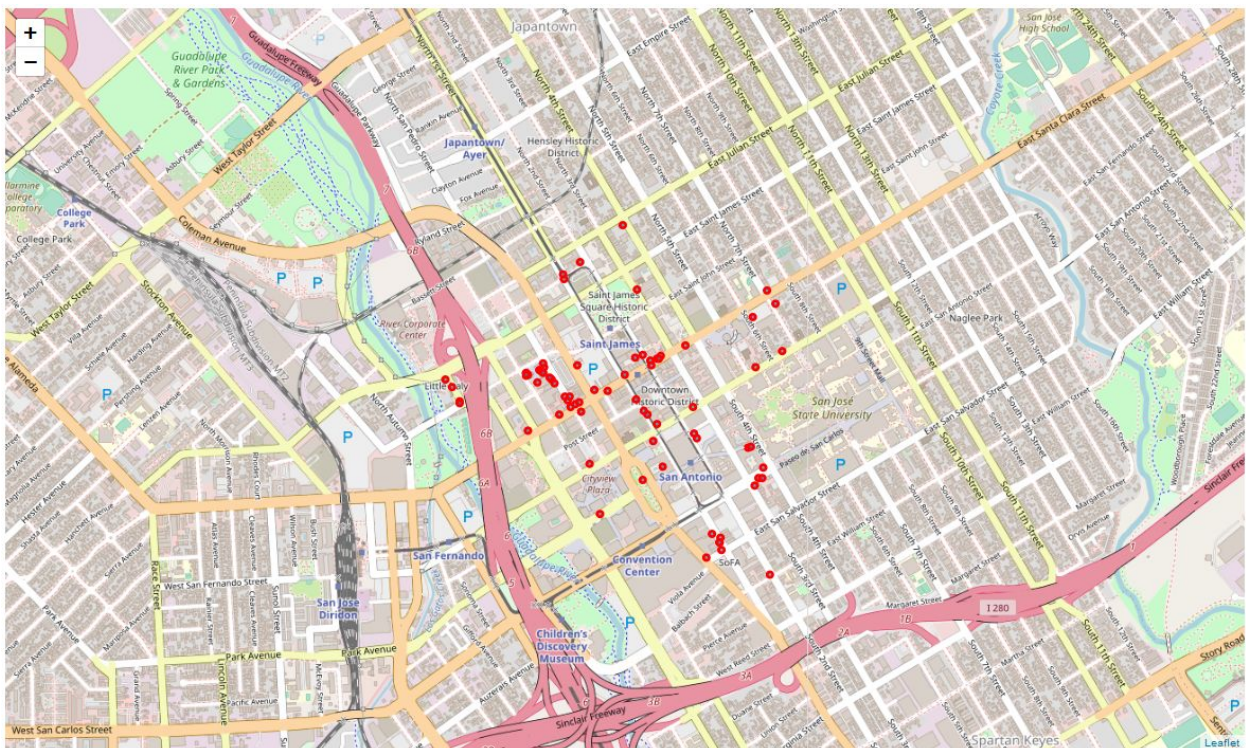
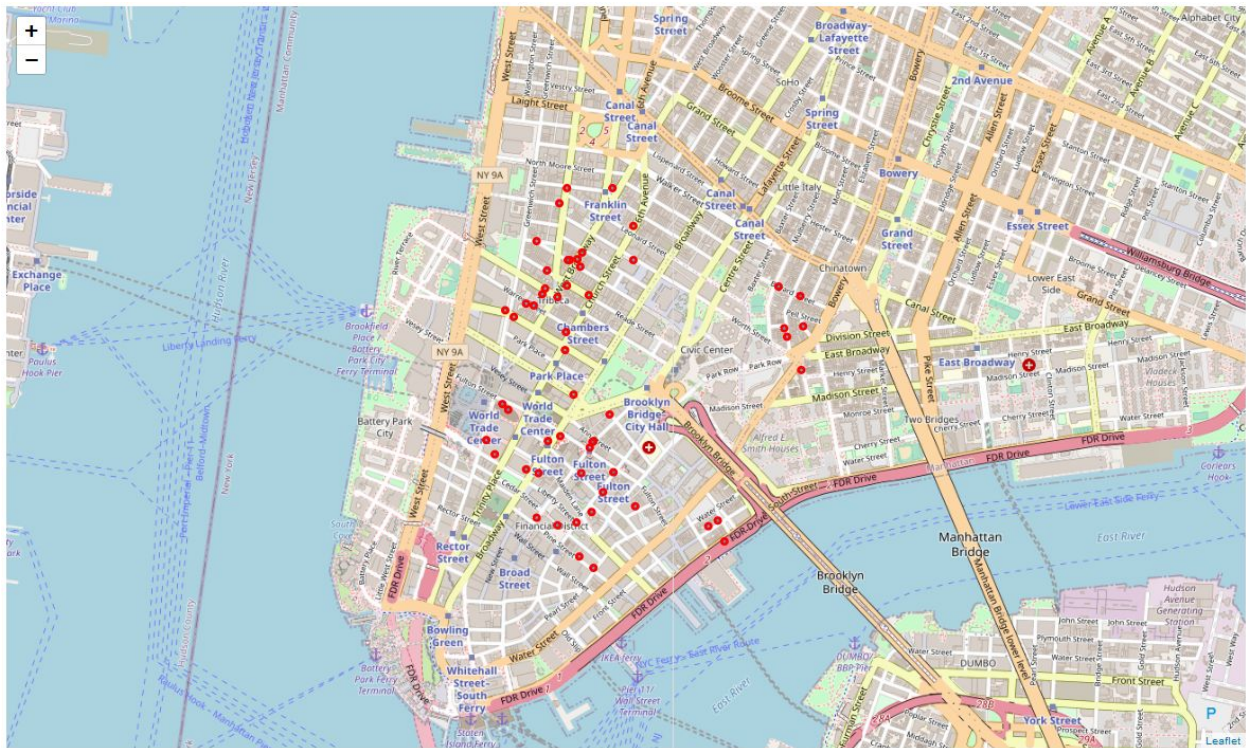
2. Data

The data required for locating the best location for such as startup would be acquired from two sources: the python library geopy, as well as the Foursquare API. The python library provides the data for the two cities' (San Jose and New York's) location, and the Foursquare API returns the location of all food serving stores, for the use in finding the

clusters and the center of the largest cluster. Another tool used includes the python library Folium, for its use in displaying maps that can be retrofitted with the locations of the stores and hence display where the stores are and the clusters they are in, assisting the visualization of the clusters. In this case, below is a map of San Jose (top) and New York (bottom).



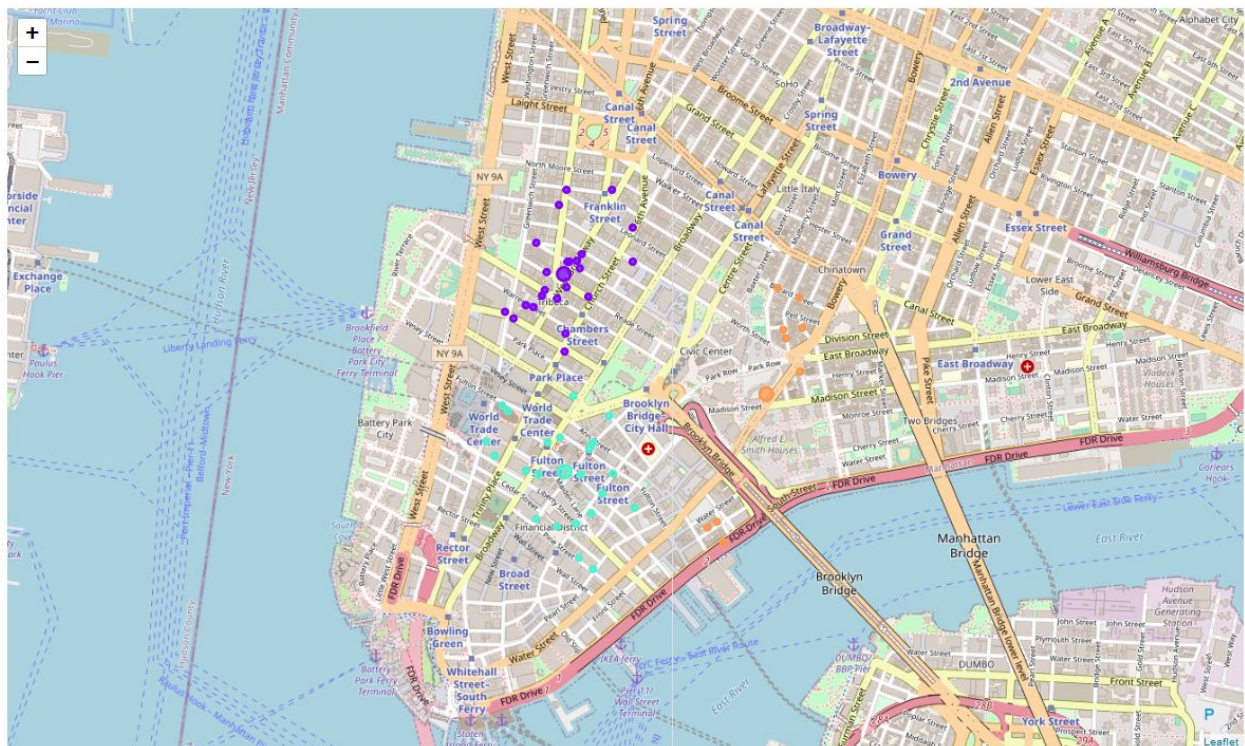
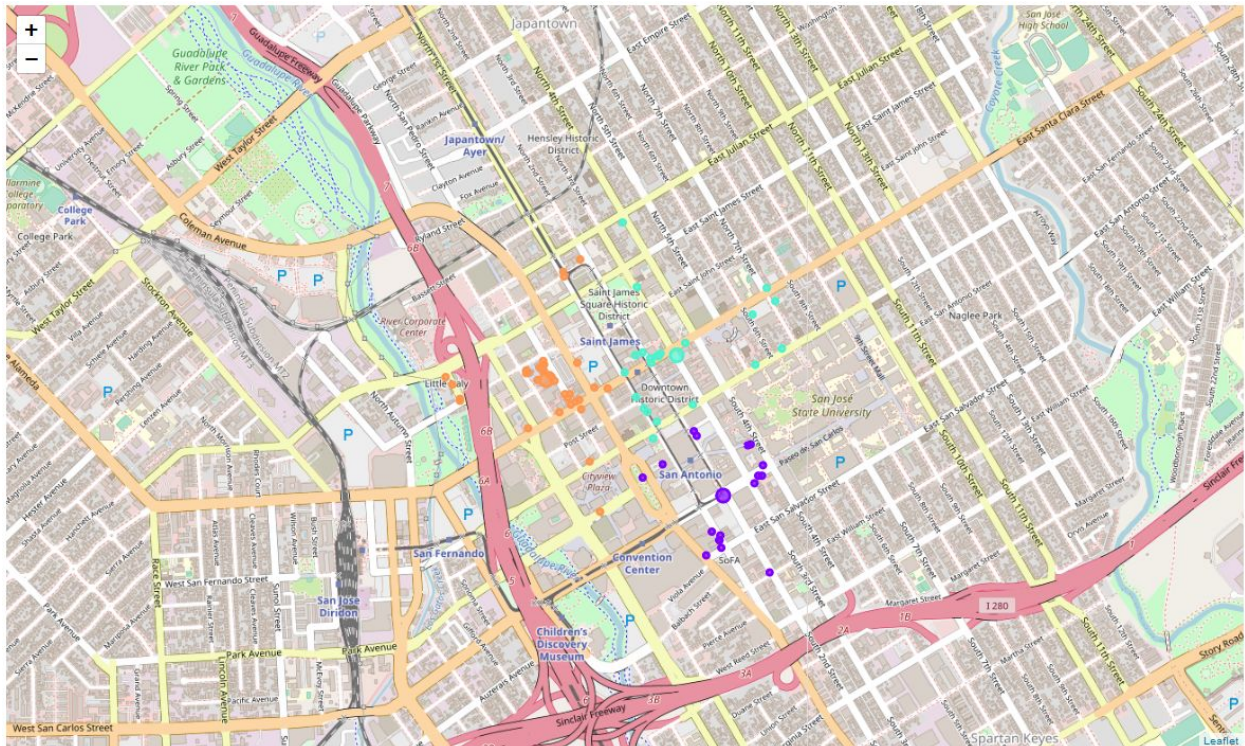
After using the Foursquare API to acquire the data for different venues, we can display a map of those as well: San Jose (top) and New York (bottom) food venues.



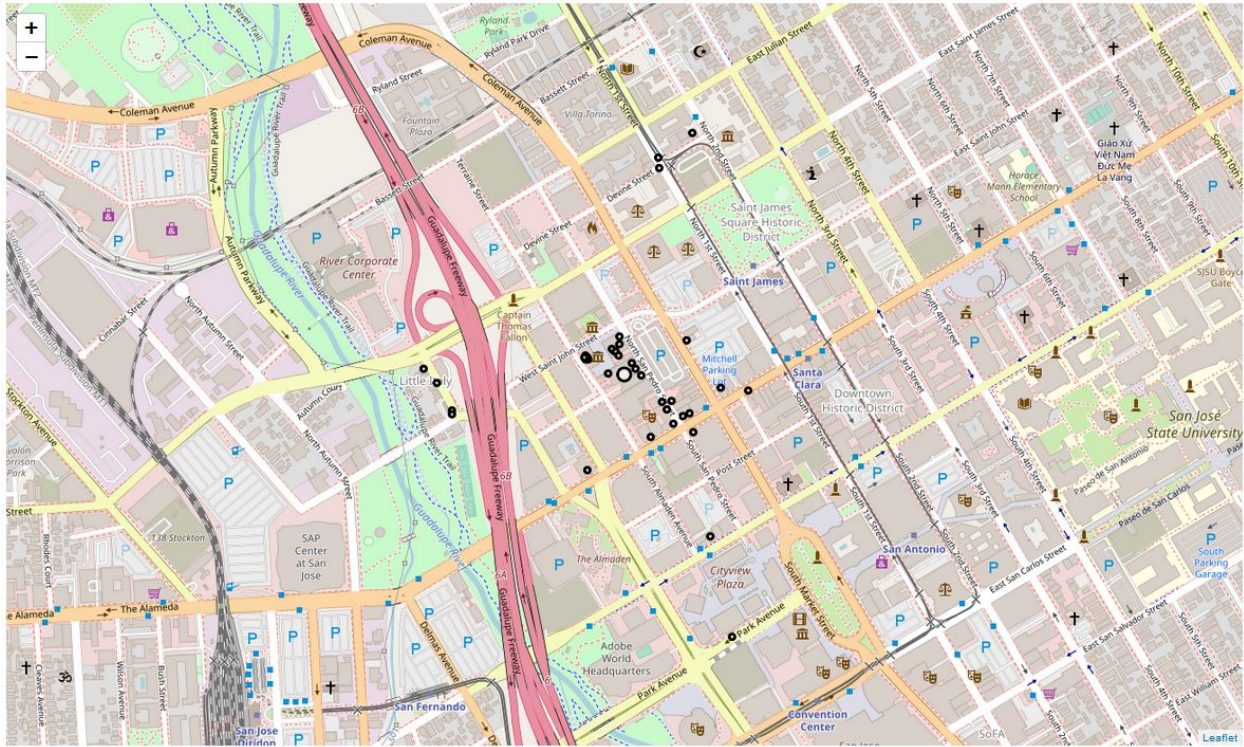
This displays the data collected to be later analyzed.

3. Methodology

The data, in order to arrive at the results, was then put through k-means clustering, dividing each city's venues into different clusters. This can also be viewed with folium: San Jose (top) and New York (bottom) food venues clustered into three groups each.



After performing the clustering, the next step is identifying the biggest cluster out of every one of the six total clusters, and this too is mapped out for visualization purposes.



The final cluster happens to be located in San Jose, and the center of that cluster is The Old Spaghetti Factory, San Jose, CA. This provides the ideal location for the startup, given the cheap and effective delivery to a nearby 37 food venues.

4. Results

The result of the data collection and analysis is that the best place for a new startup that provides green single-use tableware would be located in San Jose if given a choice between San Jose and New York, and the concrete location would ideally be The Old Spaghetti Factory. This location is considered the best because of its ability to quickly deliver tableware to the most nearby food venues at the lowest cost, saving money on the delivery front.

5. Discussion

There are improvements to be made. The scope of comparison could be extended outward, and with a bigger sample size and differing number of clusters, a better solution could be found. Another front of improvement would be considering the locations of other tableware providers, and if the stores are branded or not, and if branded they likely would be supplied the tableware from a company partner, and would not be targeted venues. This would increase the consumers of the green tableware. A final consideration would be taking into account surveys of environmental friendliness, to determine the locations or cities where more people would be likely to go green. All of these could contribute to maximizing customers and subsequently profit.

6. Conclusion

Arriving at the answer, taking an example of a green tableware startup, the best location for the startup after locating customer venues in San Jose and New York and clustering them would be the center of a cluster in San Jose, located at The Old Spaghetti Factory. This is the location that would minimize delivery costs to the most venues, maximizing profit.