

Breweries By Zip Code in Colorado Springs, CO

1. Introduction/Business Problem

Craft beer is very popular in Colorado and more breweries are looking for places to expand. Colorado Springs is the second largest metro area in Colorado with a growing population. A brewer from Denver would like to open a second location and thinks Colorado Springs is an up-and-coming location. What brewers have found is that they are more successful if there is more than one brewery nearby. However, if there are too many breweries in one area, they can oversaturate the market.

Prospective brewers and restaurateurs would like to see where breweries exist and their average rating to help decide where to open their next location.

2. Data Sources

In addition to the Foursquare Data for Colorado Springs existing breweries, I will scrape the following website for zip code data to Colorado Springs.

<https://www.zipcodestogo.com/Colorado/>

For Lat Long Data by Zip Code, I will scrape this website:

<https://gist.github.com/abatko/ee7b24db82a6f50cfce02afafa1dfd1e>

Overlaying the foursquare ratings and number of existing breweries on a map will help prospective brewers decide where they might open their next location and if they have an opportunity to get a higher rating.

3. Methodology

In this project I utilized the Pandas Read HTML function to scrape zip code data for Colorado, as well as Latitude and Longitude information for all US zip codes. The scraped data for Colorado did not require additional data manipulation. The scrape for all US zip codes provided some additional challenges. Despite being comma separated values, the comma was not read on many data points, and this required

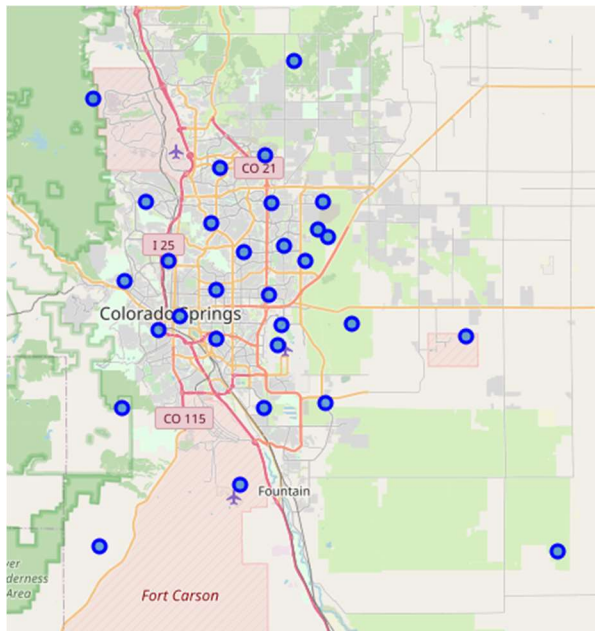
some additional data manipulation to split the strings that came through and recombine with the successful data.

The Foursquare API was utilized both to get all the breweries within a large radius in and around Colorado Springs and then the premium API calls were used on each brewery. This led to some issues because I could only use the premium API call once a day on my data set, otherwise I would get an error because I exceeded my daily number of premium calls. This was a good experience to have and see the different error codes come across the API. It was helpful to create all the premium URLs in a list and then call those individually and put the results in another list for each venue.

After all the data was gathered, the KMeans was used to cluster the data by number of breweries.

4. Results

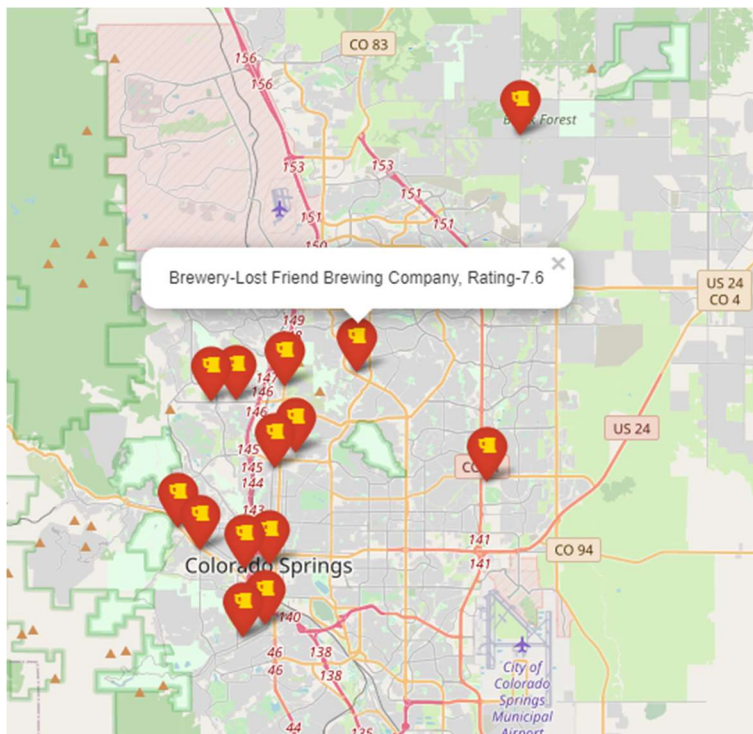
I found that there were 30 total zip codes currently used and associated with Colorado Springs, CO. Here is the map of their locations.



The initial Foursquare API call returned 30 breweries but only 14 of them were in Colorado Springs. Here is the data frame and a map of their locations using the Font Awesome Icon for Beer.

	Name	id	City	Zip	LAT	LNG	Rating
0	Red Leg Brewing Company	512cfb53e4b01674115e19b8	Colorado Springs	80907	38.898057	-104.841728	8.3
1	Cerberus Brewing Company	57c878a1498e9ad24cf1158d	Colorado Springs	80905	38.833003	-104.837443	9.3
2	Storybook Brewing	54750b26498e21a5eda35f5d	Colorado Springs	80907	38.877701	-104.812470	8.9
3	Phantom Canyon Brewing Company	4ab97703f964a5207e7f20e3	Colorado Springs	80903	38.834215	-104.825177	8.8
4	Bristol Brewing Company	4af49ef4f964a5206af421e3	Colorado Springs	80905	38.811236	-104.827392	8.6
5	Trinity Brewing Company	4b118eadf964a5203c7f23e3	Colorado Springs	80907	38.897386	-104.854334	8.1
6	Nano 108 Brewing Co	5274485711d283dea3d0fa0a	Colorado Springs	80915	38.866652	-104.717830	8.1
7	Smiling Toad Brewing	50e374bce4b0a6d1deb767d4	Colorado Springs	80905	38.806723	-104.838538	8.1
8	BJ's Restaurant & Brewhouse	4c731e737121a1cdd58464d1	Colorado Springs	80918	38.903441	-104.817887	8.2
9	Colorado Mountain Brewery at the Roundhouse	504998e4e8891a6a2ccf22fc	Colorado Springs	80904	38.840201	-104.859583	7.9
10	Black Forest Brewing Company	5980ea35b23dfa5a4a9030dd	Colorado Springs	80908	39.000006	-104.700986	7.8
11	Lost Friend Brewing Company	5ca8e9beba57b4002cfa63d1	Colorado Springs	80918	38.908649	-104.781883	7.6
12	Goat Patch Brewing Company	5bbf7b12a35dce002c2999a0	Colorado Springs	80907	38.871575	-104.822543	7.6
13	Fossil Craft Beer Company	585dae2edebdf6159514f420	Colorado Springs	80904	38.848815	-104.870666	7.6

Map:



As you can see on the above map of the Colorado Springs breweries, they are predominantly located in a handful of zip codes. Mostly in the downtown area and another cluster north of the downtown area close to and interstate highway.

After, clustering into 4 clusters you can see most zip codes in Colorado Springs do not have any breweries. The popup on the map provides detailed information on the zip code, cluster #, brewery count and average rating.

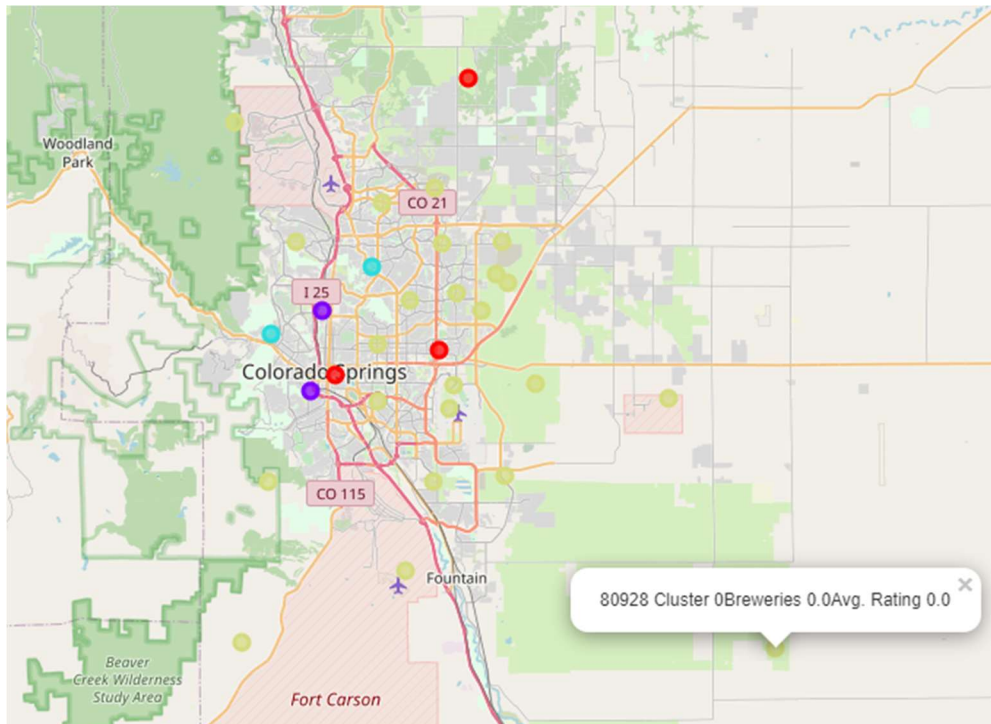
Here is a list of the clusters and their meaning for the final map of the zip code clusters.

Cluster 0: Color: Gold – 0 Breweries

Cluster 1: Color: Red – 1 Brewery

Cluster 2: Color: Purple – 3 or more Breweries

Cluster 3: Color: Teal – 2 Breweries



As one can see from the above data if a brewer wanted to go it alone there are plenty of zip codes that do not currently have any breweries. The northeast and southeast parts of the city have almost no breweries. There are also a couple of zip codes that only have one brewery outside the concentration of centrally located zip codes that are adjacent to zip codes with multiple breweries. It is recommended to focus further research on these outlying zip codes with one or fewer breweries on the eastern side of the city.

5. Conclusion

In conclusion, this was a fun and interesting project that presented several challenges from getting the initial data, converting that data to a usable format, and combining the data to get some insights. Further research would be needed, and it might be helpful to cast a wider data set around restaurants and zip code populations to provide a clearer path forward on where to open a new brewery. This does provide some good initial data and visuals on where breweries are located and was a good opportunity to map that out and bring disparate data sources together.