The Battle of the Neighborhoods

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1. Introduction

    Approximately 6 million people visit the National Parks in the state of Utah every year. The number of visitors increased 17% between 2017 and 2018 from 5.6 million visitors to 6.6 million visitors. Of all the National Parks in Utah, Zion National Park is the most popular with 4.3 million visitors in 2018. **Zion National Park** is located in **Washington County** in Utah which is in the southwest corner of the state.

    According to Chefspencil.com, Mexican Cuisine is the most popular ethnic cuisine in 27 of the 50 United States. (54%) https://www.chefspencil.com/most-popular-ethnic-cuisines-in-america/
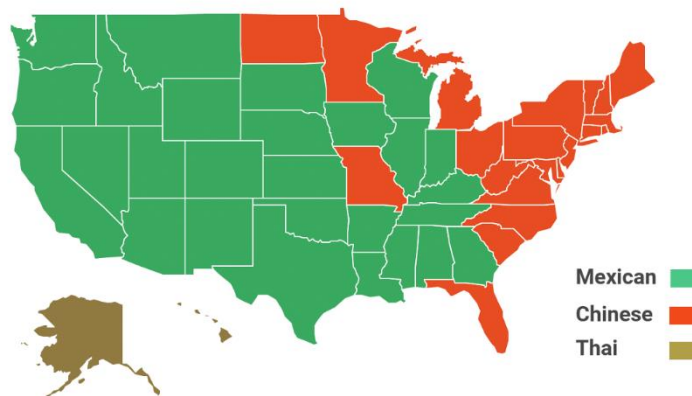
    The goal of this project is two-fold. The first goal is to find the best location to open a restaurant in **Washington County or Kent County, Utah.** The second goal is to confirm if a **Mexican restaurant** is the best choice of type of restaurant.

2. Data

    Based on the definition of our problem, factors that will influence our decision are:

    - number of existing restaurants in the cities (any type of restaurant)
    - number of and distance to Mexican restaurants in the city, if any
    - distance of city with Mexican Restaurant from city center (Zion National Park)

We acquired the list of all cities and zip codes with latitude and longitude from the website: https://www.unitedstateszipcodes.org/zip-code-database/

To narrow down our area of focus, we used visitor statistics from a **State of Utah's Travel and Tourism Industry** study performed by the Kem C. Gardner Policy Institute of the University of Utah. https://travel.utah.gov/wp-content/uploads/2019-TTtrifold-Updated.pdf

The number of restaurants and their type and location in every city will be obtained using the **Foursquare API**

3. Methodology

In this project we will direct our efforts on identifying a location to open a new restaurant, preferably a Mexican Restaurant. We will limit our analysis to Washington and Kent County's which are the surrounding counties of Zion National Park. Springdale, Utah is considered our city center for this analysis.

In the first step we identified all the cities in Washington County and Kent County. We used a US Postal code website to accumulate this data.
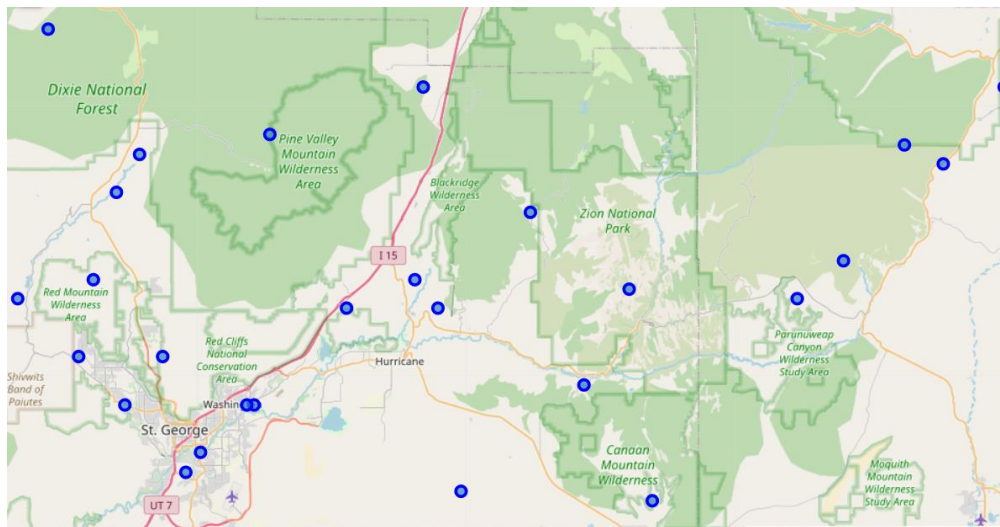
Using Foursquare, we identified all "Food" venues within a 5 mile (8000 meter) radius of each city in Washington County and Kent County.

Restaurants in Washington County and Kenty County
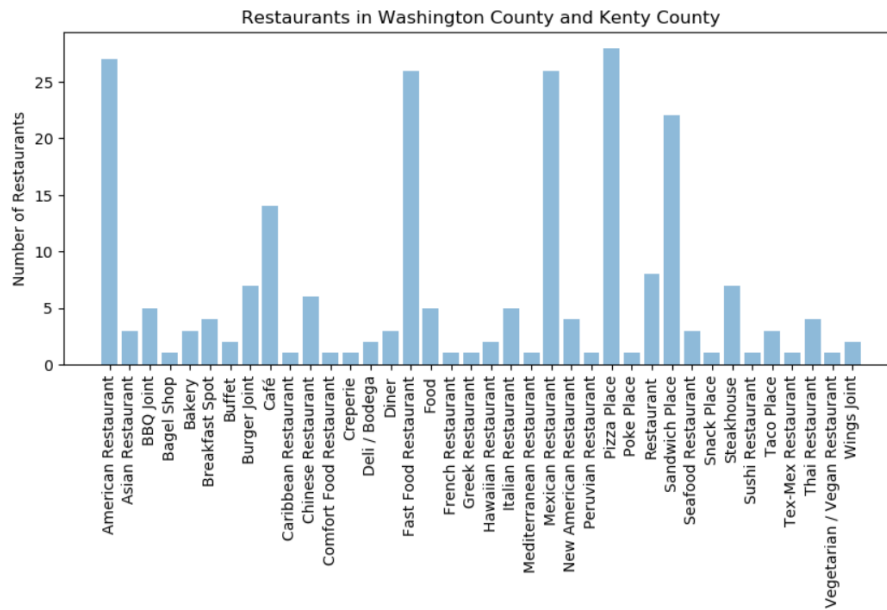
From this data we were able to visualize the many different "Food" venues that exist in this area of the county, and how many of those venues exists.
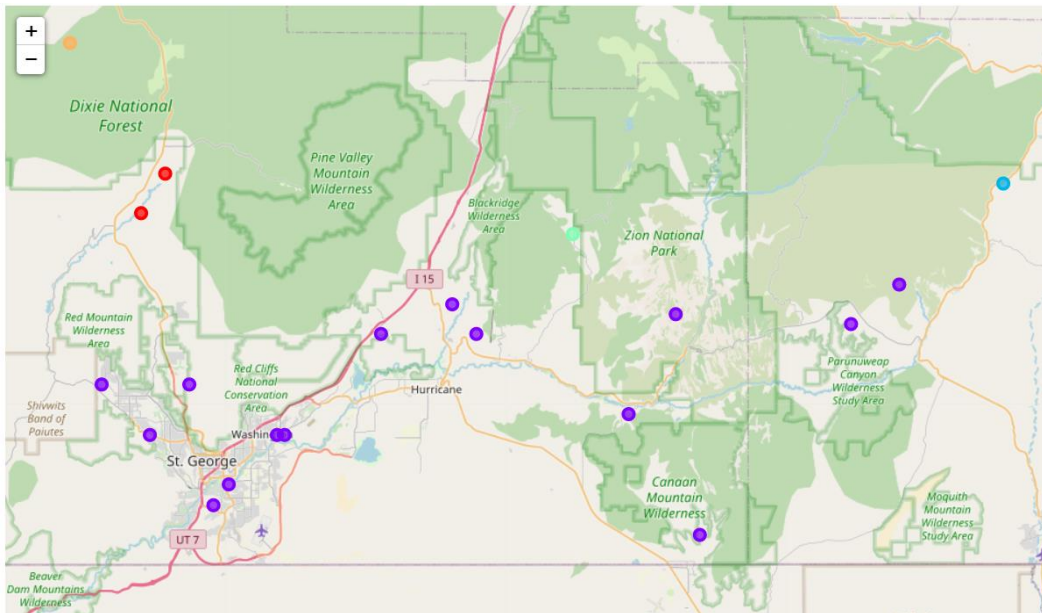
In the final step, using Clustering Machine Learning, we group the various cities into clusters based on similarities of venue categories. This cluster information should allow stakeholders to identify the best place to open a restaurant, and specifically what type of restaurant to open.

Cluster 1 – Red

zip	City	state	Cluster Labels	1st Most Common Venue
84722	Central	UT	0.0	Café
84782	Veyo	UT	0.0	Pizza Place

Cluster 2 – Purple

zip	City	state	Cluster Labels	1st Most Common Venue
84738	Ivins	UT	1.0	American Restaurant
84745	La Verkin	UT	1.0	Pizza Place
84746	Leeds	UT	1.0	Fast Food Restaurant
84755	Mount Carmel	UT	1.0	New American Restaurant
84758	Orderville	UT	1.0	American Restaurant
84763	Rockville	UT	1.0	American Restaurant
84765	Santa Clara	UT	1.0	Pizza Place
84767	Springdale	UT	1.0	American Restaurant
84770	Saint George	UT	1.0	Sandwich Place
84771	Saint George	UT	1.0	Sandwich Place
84774	Toquerville	UT	1.0	American Restaurant
84780	Washington	UT	1.0	Sandwich Place
84784	Hildale	UT	1.0	American Restaurant
84790	Saint George	UT	1.0	Sandwich Place
84791	Saint George	UT	1.0	Sandwich Place

Cluster 3 – Blue

zip	City	state	Cluster Labels	1st Most Common Venue
84729	Glendale	UT	2.0	Mediterranean Restaurant

Cluster 4 – Green

zip	City	state	Cluster Labels	1st Most Common Venue
84779	Virgin	UT	3.0	American Restaurant

Cluster 5 – Orange

zip	City	state	Cluster Labels	1st Most Common Venue
84725	Enterprise	UT	4.0	Restaurant

4. Results

    Our analysis shows that the most popular restaurants or "Food" venues in this part of the country are American Restaurants

    Mexican Restaurants, Fast Food Restaurants, Pizza Places, Sandwich Places, and Cafés. Our analysis also shows the majority of the cities around Zion National Park and Springdale Utah have these most popular restaurant types.

5. Discussion

    Purpose of this project was to identify an area around Zion National Park that would be a good city within which to open a new restaurant, specifically a Mexican Restaurant. Our analysis shows that a good number of Mexican restaurants already exist in this part of the country and within a good distance to Zion National Park in Springdale, Utah.

    Stakeholders reviewing this analysis, could disregard this information and still decide to open a Mexican Restaurant, but they should see the best location for a Mexican Restaurant would be in the further reaches of either county and a good distance from Zion National Park. This would be risky as the goal is to attract vacationers visiting the National Parks in Utah, and vacationers would most likely stay closer to Zion National Park or in the largest closest city which is Saint George, Utah. Both of these locations have a decent number of Mexican Restaurants already.

6. Conclusion

    Further review of the chefspencil website from which we started our analysis shows that Chinese Food is the 2nd most popular ethnic food in the United States. Review of the data again shows a very low number of Chinese restaurants in the prime area surrounding Zion National Park, and therefore it may be worthwhile for any stakeholders interested in opening a restaurant to consider a Chinese restaurant.