Opening a Buffalo Wings Restaurant in Buffalo

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Introduction

- Buffalo is the second largest city in New York
- Niagara Falls is a hotspot for tourism, millions of people go each year
- Buffalo is home to the Buffalo Bills and Buffalo Sabres so it is a hotspot for sports appealing to come to the city and attend the games or go to restaurants that offer drinks and food.

Problem/Why It Matters

- Providing a restaurant that is nearby the main attracts such as Niagara Falls is important because of the high tourist numbers yearly
- Providing quick and easy food for sports fans so that they are able to watch the game is also a big factor to take into consideration
- Sports fans are appealed to foods like wings because they are standard foods for gathering and watching sports
- Buffalo Wings are known to have originated in Buffalo from a family owned restaurant, Anchor Bar
- Providing food like Buffalo Wings is a business move because the city is known for the origin of Buffalo Wings, therefore tourists coming to Buffalo would be appealed to try Buffalo Wings

Data Acquisition

- Zip code data of the Buffalo-Niagara Metropolitan Area was obtained from an html: https://data.mongabay.com/igapo/zip_codes/metropolitan-areas/metro-zip/Buffalo-Niagara%20Falls%20(NY)1.html
- **Latlong.net:** This was used to obtain information about the postal codes of the Buffalo-Niagara Falls Metropolitan area
- Folium markers data of population density in Buffalo subdivisions was obtained from: https://statisticalatlas.com/metro-area/New-York/Buffalo/Population.
- **Google Maps:** This was used to obtain the latitude and longitudes of the subdivisions in Buffalo and it was also used to assess the distance to Niagara Falls and the Buffalo Bills Stadium from the zip code chosen for the restaurant location

Methodology

- Foursquare API: This was used to assess the venues after a CSV file was created using latlong.net to obtain the latitude and longitudes of the zip codes. Then this information was used to generate the top 10 venues of the zip codes
- K-Means Clustering: This was used to group the venues under a common group (zip codes)
- Folium Markers Map: This was used to create a map of the clustered labels after a merged table was creating that clustered the venues under a common zip code. The other folium markers map was created using the csv created that contained Buffalo subdivisions and the latitude and longitude of those subdivisions

Methodology cont..

Table 1. This table shows a preview of the first 5 coordinates that were obtained from creating a csv file of latitude and longitudes of Buffalo zip codes.

Methodology cont..


```python
# create a new dataframe
neighborhoods_venues_sorted = pd.DataFrame(columns=columns)
neighborhoods_venues_sorted['Zipcode'] = buffalo_grouped['Zipcode']

for ind in np.arange(buffalo_grouped.shape[0]):
    neighborhoods_venues_sorted.iloc[ind, 1:] = return_most_common_venues(buffalo_grouped.

neighborhoods_venues_sorted.head()
```

	Zipcode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	14001	Deli / Bodega	Pharmacy	Liquor Store	Chinese Restaurant	Optical Shop
1	14006	Convenience Store	Burger Joint	Sandwich Place	Yoga Studio	Fast Food Restaurant
2	14010	Pizza Place	Café	Discount Store	Athletics & Sports	Burger Joint
3	14026	Construction & Landscaping	Food	Yoga Studio	Fast Food Restaurant	French Restaurant
4	14027	Plaza	Construction & Landscaping	Food Service	Yoga Studio	Fast Food Restaurant

Table 2. This table represents the venues obtained using Foursquare API to depict what venues are commonly found under around the zip codes in Buffalo.
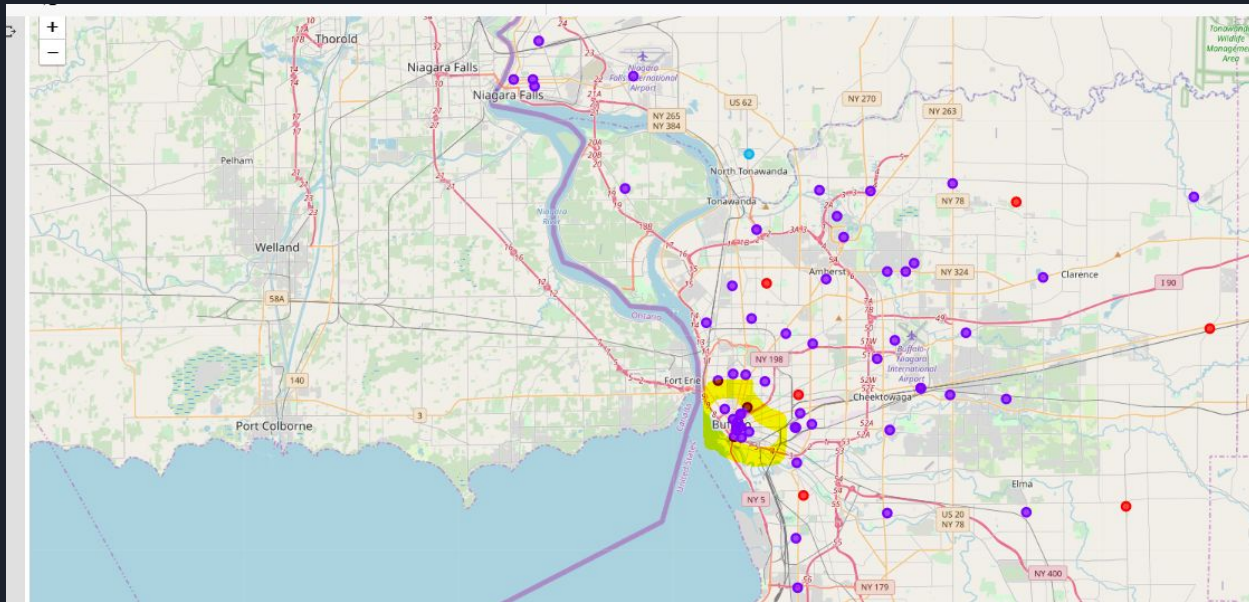
Results

- The marker dot right above Buffalo, representing the subdivision of Buffalo, has the greatest population density of 6,413 (/mi^2).
- The next highest subdivision is Tonawanda which has a population density of 3,941 (/mi^2). When looking at the merged table the cluster label that appears the most is 1, which is reflected in the markers map.
- The greatest clustering markers are around Buffalo and there are no other sections with comparable marker clusters.
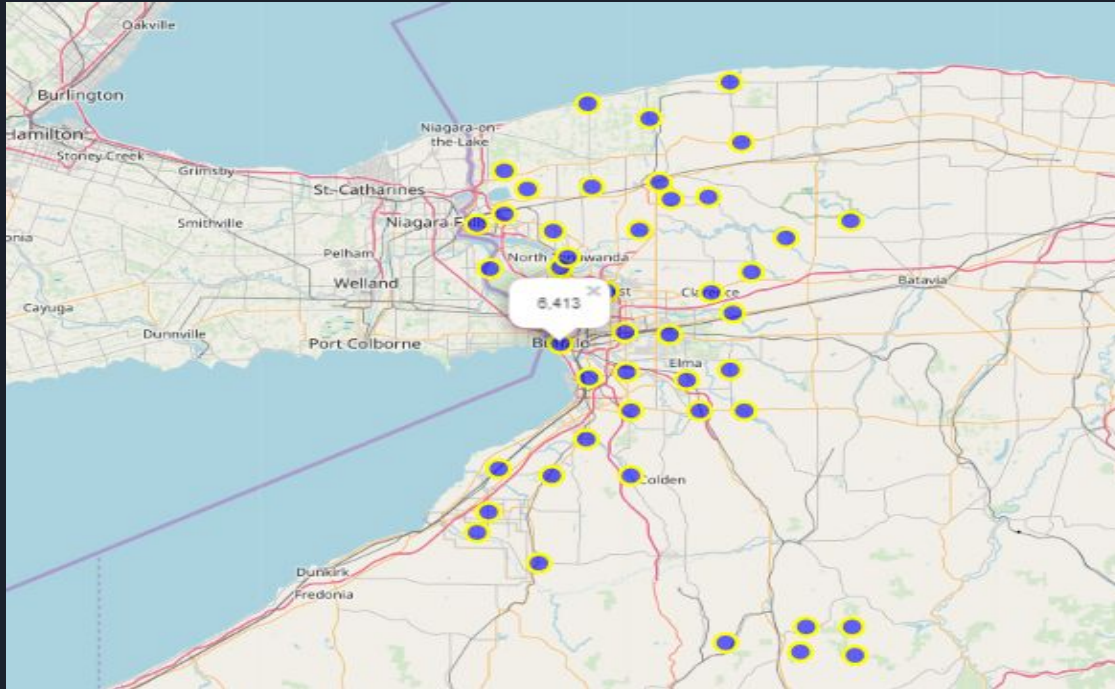
Results cont..

Figure 1. This figure illustrates the folium markers map of Buffalo from the csv file created. The yellow circle indicates the predominant cluster of labels.
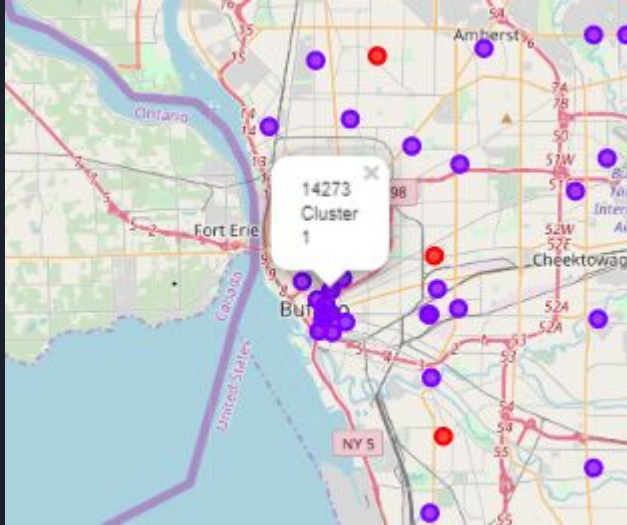
Results cont..

Figure 2. This cluster map indicates markers representing the population density of Buffalo subdivisions.

Discussion

- The city with the largest population density is Buffalo, NY
- Opening up a restaurant in zip code 14273 is a location that falls near Buffalo, which has the largest population density, and it is under the cluster label 1

- The top 5 venues around 14273 are music, bar, hotel, wine bar, and American restaurant.

- Hotels being high up on the venue list indicates that it might be a location for tourists and where many might stay when they are visiting Buffalo.

- I used Google Maps to assess how far of a commute it would be to Niagara Falls and the Buffalo Bills stadium, from the zip code 14273 and it is approximately a thirty minute commute from Niagara Falls and approximately 19 minutes from the Buffalo Bills stadium

Discussion cont..

Figure 3. This illustrates where the zip code chosen for the location of the restaurant is found. It is a label 1 cluster which is the most recurring cluster label

Conclusion

- Any location that is around Buffalo would be a good place to open up a business, largely because it is the second largest city in New York and seems to be a place that is largely visited by tourists due to the fact that hotels are in the top 3 most common venues.

- There are other variables that would need to be considered when deciding where to place a restaurant such as the cost of opening up a business in Buffalo or in areas around Buffalo. More analysis would need to be done.

References

Images:

- https://www.viator.com/tours/Toronto/Niagara-Falls-Day-Tour-from-Toronto/d623-7620P1
- https://www.blackbird.video/news-articles/nhl-teambuffalo-sabres-renews-blackbird-partnership-for-game-highlights/
- https://www.buffalobills.com/news/bills-today-dion-dawkins-had-his-best-season-yet

Resources:

- "Foursquare Developer." *Foursquare Developer*, developer.foursquare.com/.

- *Google Maps*, Google, www.google.com/maps.

- "Latitude and Longitude Finder." *Lat Long Finder*, www.latlong.net/.

- Mongabay. "Postal Codes for Buffalo-Niagara Falls (NY) Metro Area." *Mongabay.com*, data.mongabay.com/igapo/zip_codes/metropolitan-areas/metro-zip/Buffalo-Niagara Falls (NY)1.html.

- "Population of the Buffalo Area, New York (Metro Area)." *The Demographic Statistical Atlas of the United States - Statistical Atlas*, statisticalatlas.com/metro-area/New-York/Buffalo/Population.