

## Introduction

Being the son of migrant workers having to relocate was a constant through my childhood and even now when trying to find employment. For most of the moves we did growing up there seemed to be a relative or family friend living in our next destination. This provided me and my family a sense of camaraderie, a sense of belonging even as we travel and joined new communities. As such to make it easier to other Latinos to find a place of belonging this project aims to cluster and segment Kansas City's neighborhoods to determine potential locations to live or enjoy a night out. Hispanic migration to the Kansas City area dates as far back as the 1830s, when the Santa Fe Trail opened up trade from Mexico. But the first major wave of immigration came with the establishment of railroads in Kansas City, Kan., and Kansas City, Mo. In the past 20 years, turmoil in Central America and Mexico has brought a new wave of immigration to the Kansas City area, revitalizing the historic Hispanic communities. Target audiences for this project does not limit to Latino and Hispanic people but everyone. People could simply decide to look for a restaurant all the time because they are enjoy the food.

## Data

Data Required to resolve the problem In order to make a good choice in finding a location to reside in the Kansas City area the following data is required:

1. List/Information on neighborhoods from Kansas City with their respective Geodata (latitude and longitude)
2. Venues and amenities in the Kansas City neighborhoods (e.g. top 10)

This data will provide a set of parameters to determine the location of Latino centric communities where anyone can relocate. Determining the venues in these neighborhoods will allow others who only seek for a place to eat or enjoy a night out with information to make their decision. This information can be further explored for key insights into the make up of a community. Figure 1. Shows the map of the neighborhoods found through location data provided by data.KCMO.org , a free source of data pertaining the Kansas City area that aims to support developers in generating valuable insights in the community through data analysis.

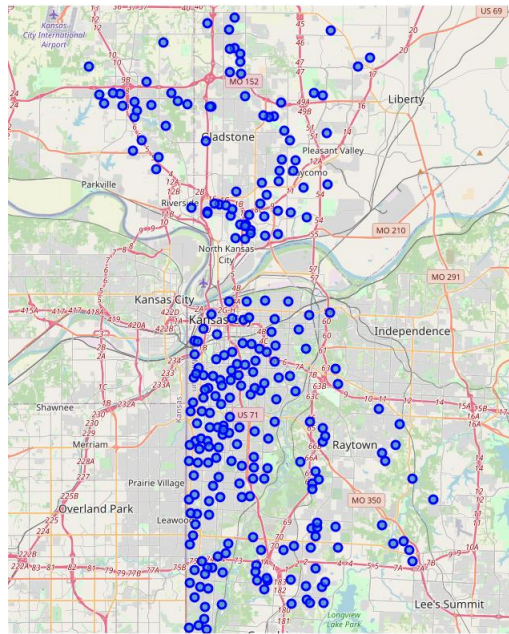


Figure 1 Neighborhoods in the Kansas City Area

## Methodology

After acquiring a data set the CSV file was formatted to include only the data of importance to determine the neighborhoods of interest. This was done initially by uploading the dataset; this was then read using the pandas library and converted onto a data-frame for further analysis and manipulation the first five rows of information can be seen in Table 1. This was followed by establishing a map with an overlay of all the neighborhoods in the list using the Geodata and Nominatim as seen in Figure 1. To determine potential neighborhoods to live location data using the foursquare API was used to determine the most popular venues in the neighborhoods. These were then listed and sorted determining the most popular establishments per neighborhood. Once this was done a further evaluation of the neighborhoods which had in their top ten venues associated with Hispanic/Latin American culture were evaluated to determine potential rental listings. This was done by clustering the neighborhoods and determining which clusters are potentially more relevant to our search. An assumption was made to establish a cut off and limit the rental search using the most common venue as an indicator of community makeup. With this in mind a data-frame with the neighborhoods with Mexican restaurant as their most common venue was established. A further exploration of one said neighborhoods Indian Mound Neighborhood was performed by mapping the nearby locations, to include as far as 2000m since some neighborhoods are primarily residential and to encompass a larger area of interest.

Table 1 Neighborhoods and Location data in the Kansas City Area

	Neighborhood	Longitude	Latitude
0	Brittany Oaks Homes Association	-94.678455	39.243321
1	Foxcroft Homes Association	-94.604972	38.924482
2	Lea Manor Homes Association	-94.604405	38.950180
3	Glen Arbor Estates Homes Association	-94.596021	38.921821
4	Red Bridge Hills Homes Association	-94.585355	38.934943

## Results

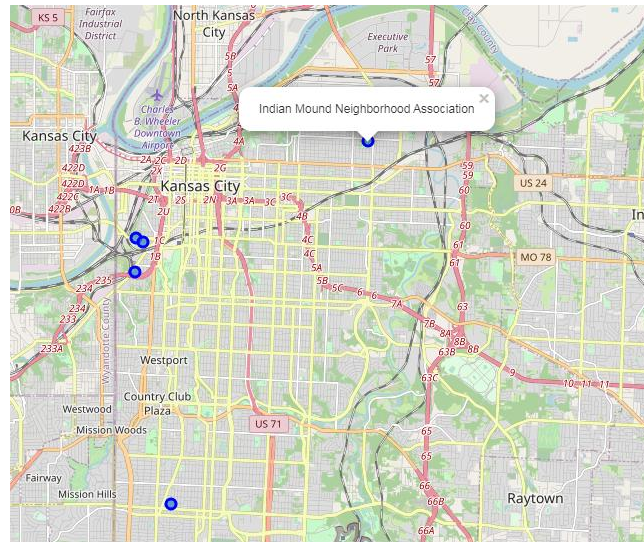
In this analysis we have explored the locations of Latin or Hispanic centric communities by assuming the most common venue establishes the majority of the make up of the area. Using clustering based on venues within a short driving distance (defined as 2000m radius) we have clustered the neighborhoods into ten groups. Of these groups, one has more than one instance of Hispanic communities staples like restaurants and other amenities that imply the make-up of the community. Of these it was decided to focus on one specific neighborhood to determine if our assumption was correct. Indian Mound Neighborhood was explored to identify nearby venues or businesses with a relevant keyword. The results showed that within a short drive plenty of restaurants were in the vicinity as well as some dives and even the Mexican Consulate. These provided a form of validation that our simplified assumption served to reduce the query response time while providing valuable information to our initial question.

Table 2 Top Ten Venues in the Neighborhoods

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	40-46 North Neighborhood & Crime Watch	Pool	Gym / Fitness Center	Fondue Restaurant	Farm	Farmers Market	Fast Food Restaurant	Fish & Chips Shop	Flea Market	Flower Shop	Food
1	41/42 Montgall Homeowners Association	Liquor Store	Yoga Studio	Farm	Fountain	Football Stadium	Food Truck	Food Service	Food Court	Food & Drink Shop	Food
2	433 Ward Parkway Condominium Association	American Restaurant	Clothing Store	Women's Store	Seafood Restaurant	New American Restaurant	Hotel	Cosmetics Shop	Coffee Shop	Sporting Goods Shop	Furniture / Home Store
3	49/63 Coalition	Restaurant	Discount Store	College Baseball Diamond	Health & Beauty Service	Bar	Flower Shop	Farmers Market	Fast Food Restaurant	Fish & Chips Shop	Flea Market
4	Amber Meadows/Amber Lakes Subdivisions	Playground	Yoga Studio	Food	Farmers Market	Fast Food Restaurant	Fish & Chips Shop	Flea Market	Flower Shop	Fondue Restaurant	Food & Drink Shop

## Discussion

Based on our results we have identified five neighborhoods where as per our assumption appeared to be Hispanic or Latin centric communities. It was established that a correlation with rental information could had made this case stronger but the rental data from zillow was unavailable to scrape due to the API restrictions. In theory, using these results, Mexican Restaurant could characterize other areas where Latin American or Mexican immigrants might consider for a potential area to rent or enjoy a night out eating and enjoying the community. This data exploration is not significantly strong secondary correlations with other data sets should be employed to establish a strong correlation between the assumptions and the findings of this exercise.



**Figure 2 Five Neighborhoods with Hispanic Centric Communities**

## Conclusion

The aim of this project was to determine the potential location of Hispanic or Latin centric communities with the assumption that the venues in the area showed the potential make up of the community. With this assumption it was determined that 5 neighborhoods met the description. To establish a stronger correlation a secondary data set should be used to dive deeper in the ethnic make-up of these neighborhoods. To clear this we dove deeper and using the Foursquare API information on businesses within a short drive other venues were found. In future subsequent analysis of other nearby establishments like churches and other amenities should be explored to increase the correlation of our simple assumption.

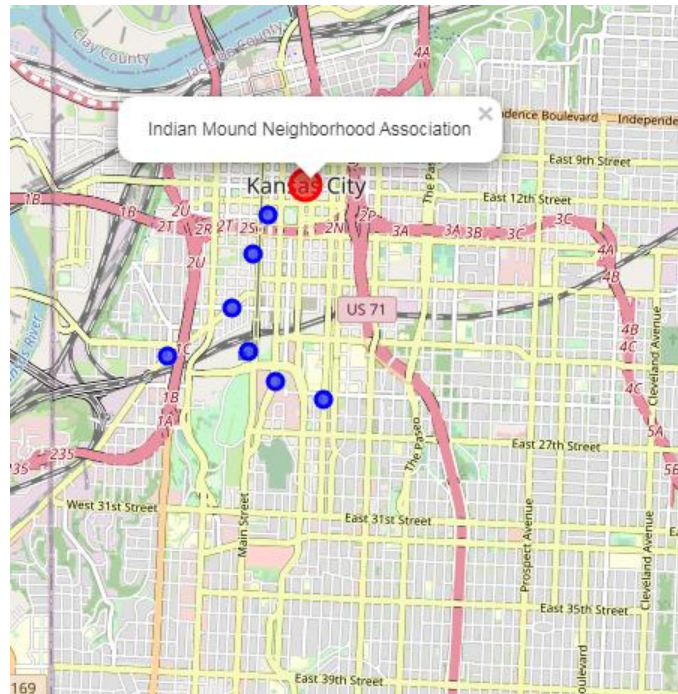


Figure 3 A Further Exploration of IMNA