

# Chicago Food Crawl Location Planning

Coursera Capstone Final Project

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## Preface

I have learned a lot from the IBM Data Course in terms of Python, Machine Learning, and Data Analytics in general. I have a new appreciation and better understanding of the field. I will take what I have learned from this course and apply it to my job. Thank you to those who contributed to the course as well as those who have helped me get to this point.

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## Introduction

### Background

Chicago is known to have a diverse population. It is a city that attracts millions of people every year for its art, entertainment, and food. Tourists and locals are attracted to the city for major events such as the Taste of Chicago and Lollapalooza as well as the art installments around the city such as the Cloud Gate in Millenium Park or the Picasso in Daley Plaza. To top it all off, with such a diverse population and its central location, Chicago has become a hub for all sorts of cuisines and beverages. On the food and drinks front, over the years, Chicago has been trying to keep its traffic alive at night with bar crawls and pop up bars but only seldom have they shifted focused on a food crawl. Festivals have been one way to get food and drink vendors to promote their businesses, but seldom has there been an event where the attraction

for a festival was the food or drink location.

As a part of the City's goal to promote diversity, bring in more visitors, and help stimulate the food and drink business, holding a food crawl festival where there are diverse cuisines and some drink locations to give visitors a break from eating would help. This would provide for a great social event where visitors can tour the city's architecture, listen to the talented musical artists, and immerse themselves in the art. Currently, with the pandemic, this is a battle and getting approval to carry out such an event would require proper safety and the right permits as well as time. Given the timeframe, finding the right location within the city through data analysis and then allocating enough time for the marketing campaign is essential to contributing to the city's primary goals as soon as it safely opens back up to the public.

### **Problem Statement/Purpose**

The purpose of this capstone project is to compare the locations within Chicago to see which Zip Code is best suited to attract tourists/locals for a food crawl event meant to showcase the City's diversity.

### **Interest**

Living in Chicago has sparked a personal interest in wanting to help the city. The city has been having problems with showcasing its diversity, attracting tourism, as well as causing a lot of restaurants to shut down due to COVID-19. There was a desire to help create a solution that could be beneficial for the city as well as the affected business owners.

## Data

In order to pinpoint where this food crawl festival can be held, food and drink venues associated with the Zip Codes within Chicago need to be searched. Then from there, the data would need to be minimized to focus on the top 10 Zip Codes to get a better picture as to how the planning committee wants to proceed based on their main decision factors. The main factors for choosing a location for the food crawl will be based on the number of diverse cuisines, some diverse drink locations, and an area that allows for some form of entertainment or art in between the food crawl locations. Locations must be within a decent proximity of each other.

### Data Source

The data for this project involved zip codes from a Chicago real estate website as well as

the scrubbing of venues within the specified zip codes from Foursquare Places API.

## Data Cleaning

Data was cleaned based on removing the zip codes that returned coordinates outside of Chicago from Nominatim. There were 86 original zip codes listed but 56 final zip codes to pull from. The data was then further cleaned when narrowing down the list of venues to cuisines and beverage types. Some minor strings slipped into the final list so these were later removed from the data frame before narrowing down the list to the venues for the top 10 locations. These zip code locations were determined based on the most unique venue types in those regions.

## Methodology

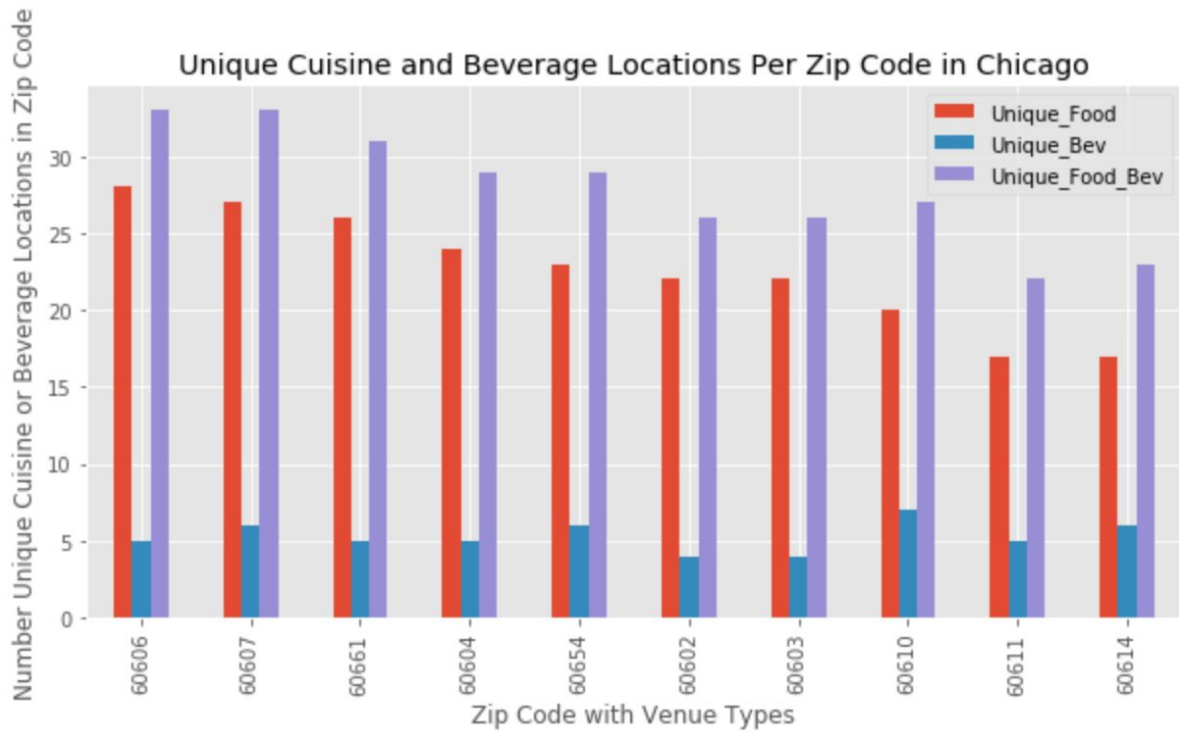
The 56 Zip Codes that were passed through Foursquare returned over 1000 venues. These venues were reduced to Food and Beverage related categories. The amount of unique values based on 'Venue\_Category' were listed to get an idea of how versatile that Zip Code was. This was used as an indicator for diversity.

The quantities of each type of unique cuisine or beverage venue were recorded in a table per Zip Code and then the top 10 Zip Codes were determined based on the amount of unique cuisine types available. Review Table 1 and Chart 1 to get an idea of what unique food or beverage categories exist in the zip codes.

***Table 1: Unique Food, Unique Beverage, or Both Venue Types per Zip Code***

	Unique_Food	Unique_Bev	Unique_Food_Bev
Neighbourhood			
60606	28	5	33
60607	27	6	33
60661	26	5	31
60604	24	5	29
60654	23	6	29
60602	22	4	26
60603	22	4	26
60610	20	7	27
60611	17	5	22
60614	17	6	23

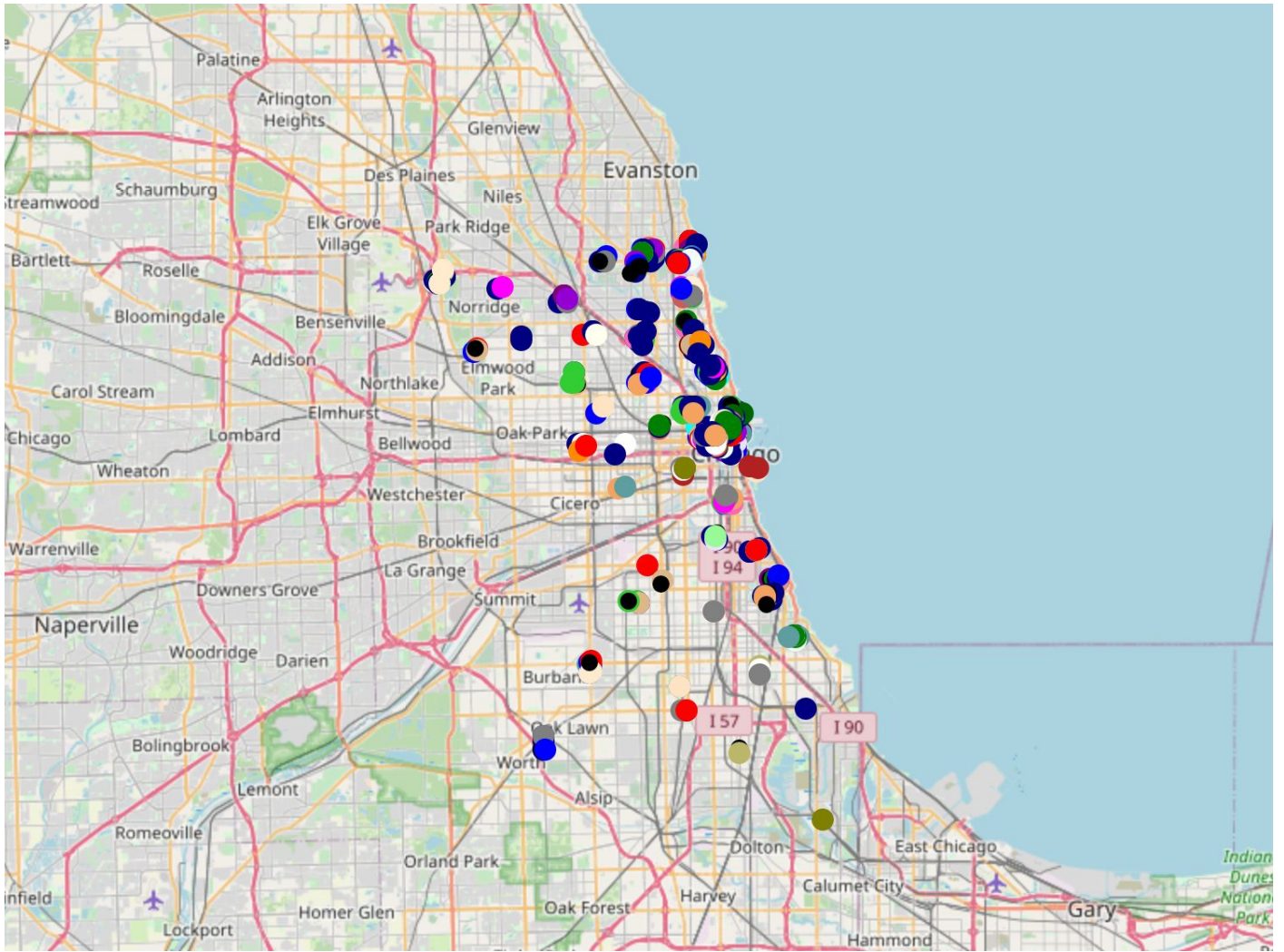
**Chart 1: Visual for Unique Food, Unique Beverage, or Both Venue Types per Zip Code**





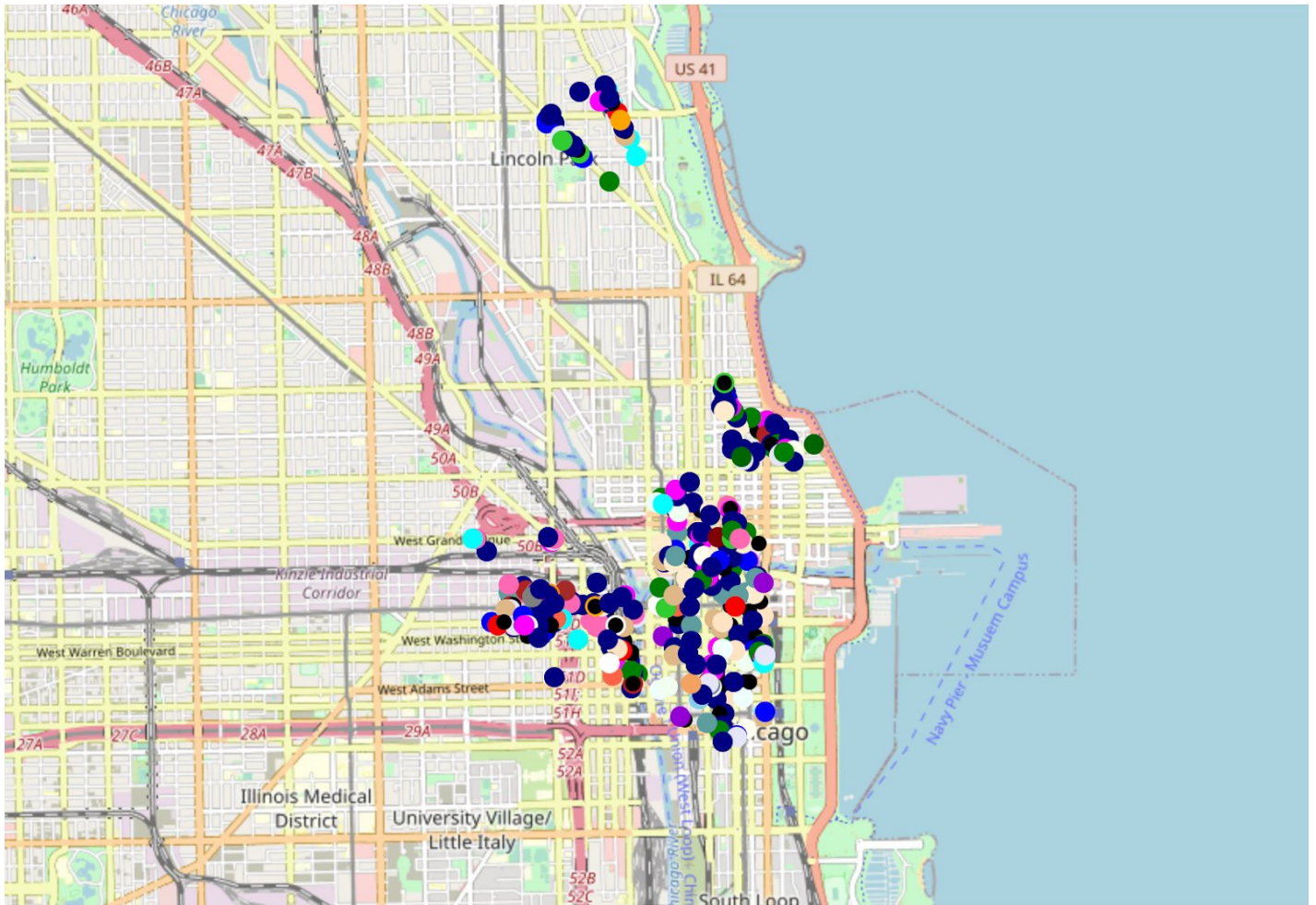
Before the locations were narrowed down to the top 10 locations, the following map shows all 56 locations and their unique food or beverage locations. The different colored dots represent the types of food or beverage (ex: Middle Eastern Restaurant, Italian Restaurant, Mexican Restaurant, Bar, Gastropub, Coffee, etc.).

***Map 1: All 56 Zip Code's Food and Beverage Locations***



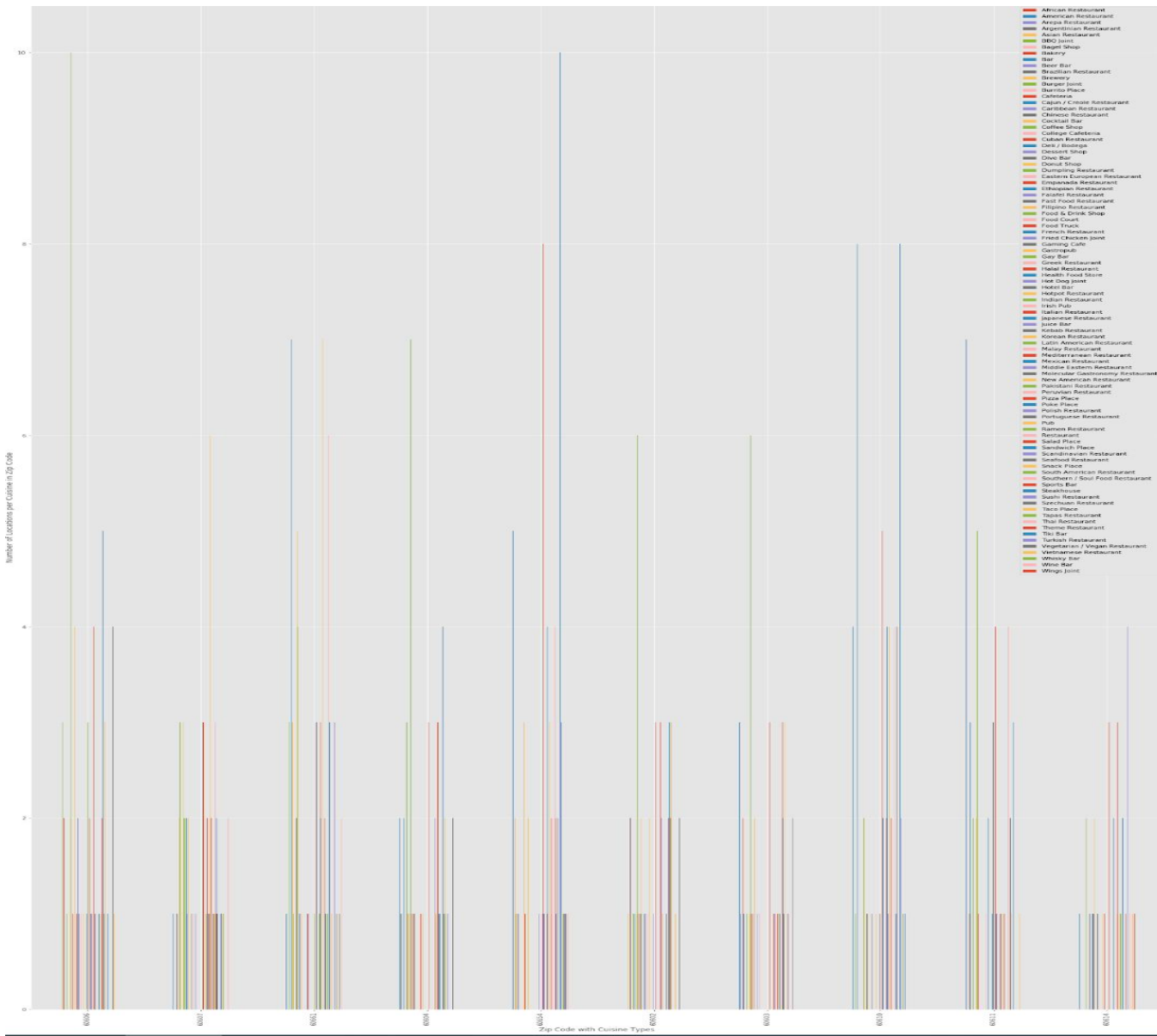
The next map gives an idea of where the food and beverage locations are for the top 10 zip code locations highlighted in Table 1. The colored dots represent the exact same categories as Map 1.

***Map 2: Top 10 Zip Code Food and Beverage Locations***



Now that the focus was narrowed down, it was time to determine the ideal location to hold the food crawl. The following chart is very condensed and detailed but it shows the amount of locations for each venue category. These colors are the same colors used for the dots. Refer to the legend for an idea on the type of categories.

Chart 2: Amount of Locations per Venue Category per Zip Code



For a final decision, the following table was used to look at the frequency of the venue types and the amount of unique food categories VS unique beverage categories within the region:

Table 2: Top 10 Venue Types with the Amount of Unique Food and Unique Beverage Venues

*for Each Zip Code*

	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	Unique_Food	Unique_Bev
3	60606	Coffee Shop	Sandwich Place	Donut Shop	American Restaurant	Vegetarian / Vegan Restaurant	Mediterranean Restaurant	Indian Restaurant	Snack Place	Mexican Restaurant	BBQ Joint	28	5
4	60607	New American Restaurant	Italian Restaurant	Cocktail Bar	Restaurant	Japanese Restaurant	Burger Joint	Pizza Place	Brewery	Coffee Shop	Mediterranean Restaurant	27	6
9	60661	New American Restaurant	Bar	Restaurant	Cocktail Bar	Coffee Shop	Sandwich Place	Brewery	Italian Restaurant	Mediterranean Restaurant	BBQ Joint	26	5
2	60604	Coffee Shop	Sandwich Place	Italian Restaurant	Pizza Place	Burger Joint	Vegetarian / Vegan Restaurant	Middle Eastern Restaurant	Salad Place	Bar	American Restaurant	24	5
8	60654	Steakhouse	Italian Restaurant	Bar	American Restaurant	Restaurant	Mexican Restaurant	Coffee Shop	Sushi Restaurant	New American Restaurant	Cocktail Bar	23	6
0	60602	Coffee Shop	Mediterranean Restaurant	American Restaurant	Sandwich Place	Italian Restaurant	Snack Place	Bar	Middle Eastern Restaurant	Gastropub	Salad Place	22	4
1	60603	Coffee Shop	Snack Place	American Restaurant	Salad Place	Italian Restaurant	Sandwich Place	Gastropub	Donut Shop	Vegetarian / Vegan Restaurant	Bakery	22	4
5	60610	Bar	Steakhouse	Italian Restaurant	Mexican Restaurant	American Restaurant	Seafood Restaurant	New American Restaurant	Restaurant	Cocktail Bar	Coffee Shop	20	7
6	60611	American Restaurant	Coffee Shop	Restaurant	Italian Restaurant	Hotel Bar	Steakhouse	Bar	Burger Joint	Cocktail Bar	French Restaurant	17	5
7	60614	Bar	Sushi Restaurant	Pizza Place	Italian Restaurant	Burger Joint	Donut Shop	Coffee Shop	Sandwich Place	Mexican Restaurant	Wings Joint	17	6

## Results

Based on the tables, charts, and folium maps, the main factors in deciding the ideal Zip Code to host the “Around the World” Food Crawl are the vicinity of the locations to each other,

the amount of diverse cuisines and beverage locations, and the frequency of the types of restaurants. Another factor that needs to be taken into consideration when attracting locals and tourists is the engagement of entertainment, music, and art. Reviewing the graphs, tables, and maps, the highest amount of unique foods are in 60606 and the lowest is 60614. A good secondary location with diverse cuisine and beverages is 60607.

In terms of locations being close to each other, 60607 shows that some cuisine venues are scattered but is the second most diverse. 60606 has the most restaurants that are close within each other but also has another section of the region that is across the Chicago River and into the city. 60606 has the most frequent venue type listed as coffee shops but its primary top 10 common venues is mainly of cuisines whereas 60607 has a few drink venues within its top 10 common venues.

In terms of location and the access to art, music, and entertainment, 60606 is close to Millenium Park, has a few theatres for plays, and a few musical venues. Not to mention that the architecture and boat tours are available along the riverfront. 60607 has more of a social scene with bars and some architecture tours but is not as active as 60606. If 60607 and 60661 were combined together as a part of the food festival, this could serve as a backup location for the event but the primary focus should be on showcasing 60606.

## Discussion

While a primary location has been identified, more detailed analysis can be performed



to confirm if 60606 would be the ideal location for the food crawl. More information from Foursquare highlighting restaurant ratings or amount of people who have rated the venues would help in the detailed analysis. Some factors affected the overall results. One being Nominatim's ability to accurately locate Zip Codes. The biggest issues to getting all the correct coordinates for the zip codes were the limitations to how many characters that could be passed into Nominatim; It was a difference of being unable to include "Chicago" into the search terms for each zip code and having to settle for ", IL" instead. By filtering out the zip codes that were incorrect, the analysis ignored other potential candidates for the food crawl. Future analysis should involve a better database.

In the future, the analysis should call for a different website that contains the Zip Codes, their latitude and longitude, as well as population, and town or region names. This information would help bypass Nominatim as well as provide some more insight to the type of population that lives in that region. This information could be further analyzed with correlation to the types of cuisines found at each zip code and how well perceived the location is to attract more tourists/locals.

## Conclusion

With the pandemic being an ongoing problem, crowds flocking to bars to socialize has

been problematic and similarly, this problem has affected restaurants. Chicago has suffered quite a bit with multiple food and beverage locations closing down due to being unable to support the rent during lockdown, COVID restrictions, and not attracting as much traffic to their businesses. The hope is that when COVID-19 is controlled and the environment is safe for the public to resume activities pre-COVID-19, the city of Chicago will be looking for ways to attract locals and tourists again to help showcase its diversity as well as boost its economy. Marketing and planning for an “Around the World” Food Crawl Festival in the coming year in the 60606 Block is one solution to Chicago’s goal for showcasing diversity, improving tourism, and boosting commerce.