

# IBM data science professional certificate capstone – Battle of neighborhoods

Project Presentation  
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As a part of the final capstone assignment, this is going to be my final report presentation which will have the following components :

- ▶ Introduction/business problem
- ▶ Analysis and results
- ▶ Observations
- ▶ Conclusion



**Introduction:** I am going to explore the city of Chicago on basis of architecture and tourist outlooks, food habits, recreation and sports and cultural outlook, so that either the residents or tourists have readily available access to city's neighbourhood exploration and the observations would be substantiated with sufficient data. Lastly I will compare this exploration data with similar data of neighbourhoods of two other cities namely New York and Toronto, to cite the similarities as well as the differences between the people's culture of surrounding cities as well as countries.

**Background:** Chicago is a city in the state of Illinois in United States and is the third most populated city in the US with approximate population of 2.7 million. Chicago is widely known for its food, architecture and loyal sports fan, it also houses a few of the most reputed college and high school institutions in the world. So I am going to explore the neighbourhoods of the city on the basis of following pointers:

- ▶ Educational institutions—High schools, universities
- ▶ Cuisines—Restaurants, bars, stalls and cafes
- ▶ Transportation— Public : Buses, subways and trains
- ▶ Sports—Stadiums, arenas and clubs
- ▶ Healthcare—Hospitals and clinics
- ▶ Tourist attractions— Architectural buildings, museums and skyscrapers

# Exploration of Chicago – neighborhoods

Gold Coast, Old Town, Near North Side,	
River North and West Loop	
Category Listing	Venue Count
Architecture	1
Clothing	1
Coffee and Snacks	20
Drinks	8
Entertainment	9
Fitness	7
Health	1
Hotel	10
Parks and Garden	2
Personal Care	5
Recreation	2
Restaurant	29
Shops and Supermarket	4
Stationary	1
<b>Total</b>	<b>100</b>

Edgewater and Andersonville	
Category Listing	Venue Count
Antiques	5
Architecture	1
Bookstore	2
Coffee and Snacks	17
Drinks	15
Entertainment	3
Fitness	2
Health	2
Hotel	1
Parks and Garden	2
Personal Care	5
Restaurant	34
Shops and Supermarket	11
<b>Total</b>	<b>100</b>

## Clusters 1 & 2

- Gold Coast
- Old Town
- Near North Side
- River North
- West Loop
- Edgewater
- Andersonville

# Exploration of Chicago – neighborhoods

Lakeview and Lincoln Park	
Category Listing	Venue Count
Architecture	2
Clothing	3
Coffee and Snacks	30
Drinks	4
Entertainment	5
Fitness	6
Hotel	1
Parks and Garden	2
Personal Care	5
Restaurant	26
Shops and Supermarket	15
Stationery	1
<b>Total</b>	<b>100</b>

Logan Square and Wicker Park	
Category Listing	Venue Count
Antiques	4
Clothing	4
Coffee and Snacks	10
Drinks	15
Education	2
Fitness	3
Health	1
Parks and Garden	2
Personal Care	4
Restaurant	35
Shops and Supermarket	20
<b>Total</b>	<b>100</b>

## Clusters 3 & 4

- Lakeview
- Lincoln Park
- Logan Square
- Wicker Park

Edison Park	
Category Listing	Venue Count
Coffee and Snacks	3
Drinks	6
Entertainment	1
Parks and Garden	3
Restaurant	15
Shops and Supermarket	1
Total	29
Hyde Park	
Category Listing	Venue Count
Coffee and Snacks	4
Drinks	2
Fitness	1
Health	1
Parks and Garden	1
Restaurant	11
Shops and Supermarket	8
Transport	4
Total	32

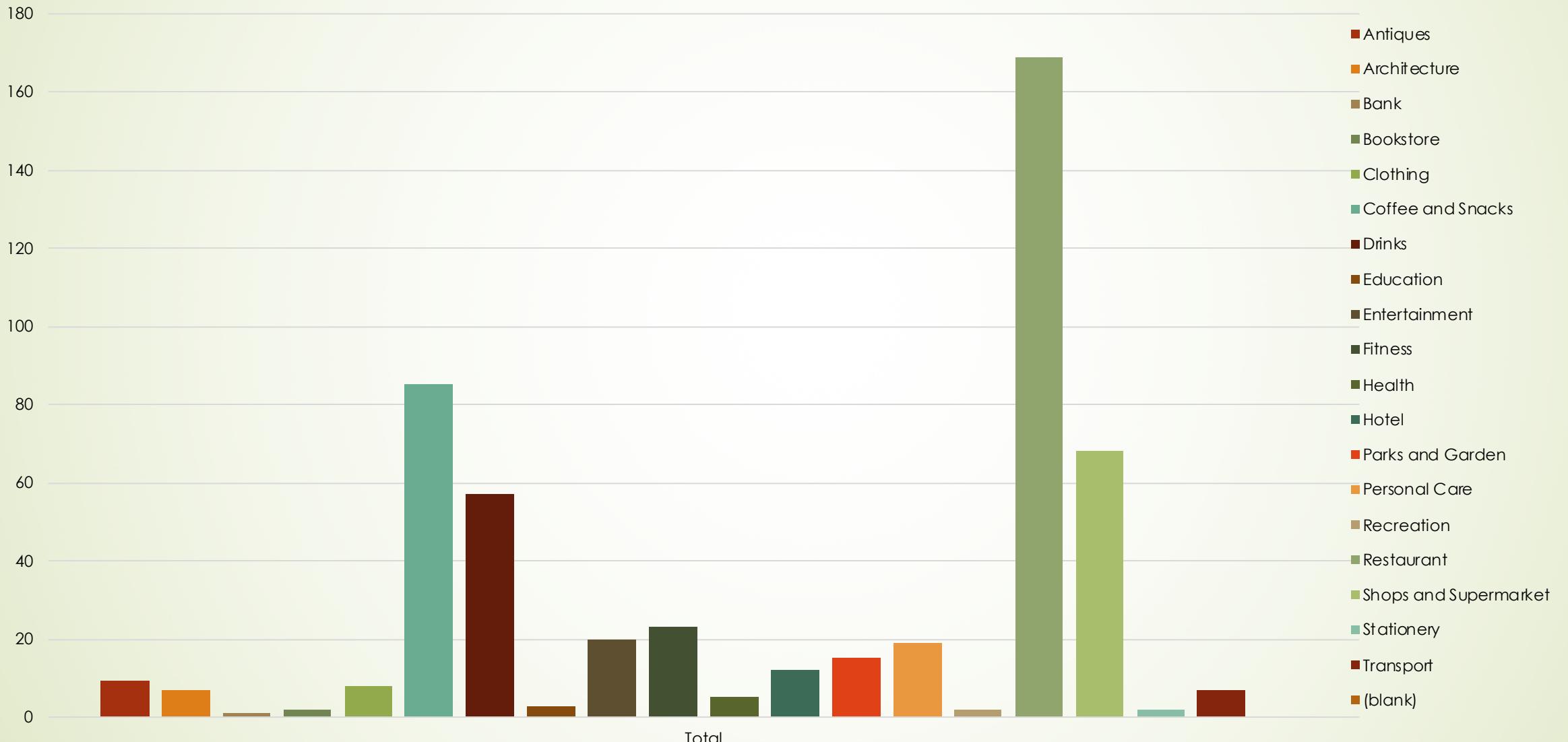
Bridgeport and Near South Side	
Category Listing	Venue Count
Architecture	3
Bank	1
Coffee and Snacks	1
Drinks	8
Education	1
Entertainment	2
Fitness	4
Parks and Garden	3
Restaurant	19
Shops and Supermarket	9
Transport	3
Total	54

# Exploration of Chicago – neighborhoods

## Clusters 5, 6 & 7

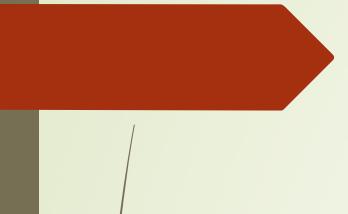
- Edison Park
- Bridgeport
- Near South Side
- Hyde Park

## Venue category – classification for all venues from all 15 neighborhoods.



Neighbourhood	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	Andersonville	Coffee Shop	Italian Restaurant	Breakfast Spot	Asian Restaurant	Grocery Store	Bar	Antique Shop	Sandwich Place	Middle Eastern Restaurant	Mexican Restaurant
1	Bridgeport	Chinese Restaurant	Mexican Restaurant	Art Gallery	Pizza Place	Hot Dog Joint	Bar	Sporting Goods Shop	Grocery Store	Wings Joint	Pharmacy
2	Edgewater	Coffee Shop	Sandwich Place	Grocery Store	Asian Restaurant	Mexican Restaurant	Italian Restaurant	Sushi Restaurant	Lounge	Breakfast Spot	Gym
3	Edison Park	Park	Italian Restaurant	Bar	Pizza Place	Donut Shop	Bakery	Bus Station	Spa	Shipping Store	Seafood Restaurant
4	Gold Coast	Hotel	Italian Restaurant	American Restaurant	Gym	Boutique	Coffee Shop	Women's Store	Salon / Barbershop	Café	Steakhouse
5	Hyde Park	Science Museum	Bookstore	Coffee Shop	Café	Park	Sandwich Place	Pizza Place	Spa	Burger Joint	Caribbean Restaurant
6	Lakeview	Sandwich Place	Japanese Restaurant	Spa	Breakfast Spot	Pizza Place	Theater	Café	Sports Bar	Vegetarian / Vegan Restaurant	Sushi Restaurant
7	Lincoln Park	Pizza Place	Coffee Shop	Italian Restaurant	Sushi Restaurant	Hot Dog Joint	Theater	Indonesian Restaurant	Sandwich Place	Salon / Barbershop	New American Restaurant
8	Logan Square	Coffee Shop	Cocktail Bar	Bar	Latin American Restaurant	Ice Cream Shop	Dive Bar	Grocery Store	Café	Pizza Place	Park
9	Near North Side	Hotel	American Restaurant	Steakhouse	Coffee Shop	Gym	Pizza Place	Optical Shop	Yoga Studio	Women's Store	Gym / Fitness Center
10	Near South Side	Chinese Restaurant	Coffee Shop	Bar	Bakery	Korean Restaurant	Pizza Place	Park	Salon / Barbershop	Asian Restaurant	Bank
11	Old Town	Italian Restaurant	Café	Coffee Shop	Gym	Gym / Fitness Center	Comedy Club	Restaurant	Grocery Store	American Restaurant	Cycle Studio
12	River North	Steakhouse	Italian Restaurant	Hotel	Mexican Restaurant	Restaurant	Coffee Shop	Gym	Bar	American Restaurant	New American Restaurant
13	West Loop	New American Restaurant	Coffee Shop	Italian Restaurant	Cocktail Bar	Brewery	Sandwich Place	Pizza Place	Bar	Mexican Restaurant	Bakery
14	Wicker Park	Pizza Place	Bar	Coffee Shop	Boutique	Taco Place	Sushi Restaurant	Bookstore	Breakfast Spot	Café	Cajun / Creole Restaurant

The 10 most common venue categories from all 15 neighborhoods of Chicago.



# The most common venues of Toronto and New York neighborhoods.

	Neighbourhood	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
0	Adelaide, King, Richmond	Coffee Shop	Café	Bar	Thai Restaurant	American Restaurant	Steakhouse	Hotel	Cosmetics Shop	Bakery
1	Berczy Park	Coffee Shop	Cocktail Bar	Café	Cheese Shop	Bakery	Beer Bar	Seafood Restaurant	Steakhouse	Italian Restaurant
2	CN Tower, Bathurst Quay, Island airport, Harbo...	Airport Service	Airport Lounge	Airport Terminal	Boat or Ferry	Boutique	Airport	Airport Food Court	Airport Gate	Sculpture Garden
3	Cabbagetown, St. James Town	Coffee Shop	Bakery	Pizza Place	Pub	Café	Italian Restaurant	Restaurant	Bank	Pharmacy
4	Central Bay Street	Coffee Shop	Café	Italian Restaurant	Burger Joint	Sandwich Place	Japanese Restaurant	Spa	Sushi Restaurant	Middle Eastern Restaurant

	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	Battery Park City	Park	Coffee Shop	Hotel	Memorial Site	Gym	Wine Shop	Clothing Store	Italian Restaurant	Women's Store	BBQ Joint
1	Carnegie Hill	Coffee Shop	Pizza Place	Café	Yoga Studio	Bookstore	Wine Shop	Cosmetics Shop	French Restaurant	Bar	Japanese Restaurant
2	Central Harlem	African Restaurant	Public Art	Art Gallery	Seafood Restaurant	Chinese Restaurant	Gym / Fitness Center	French Restaurant	American Restaurant	Cosmetics Shop	Liquor Store
3	Chelsea	Coffee Shop	Ice Cream Shop	Italian Restaurant	Bakery	Nightclub	Theater	Seafood Restaurant	American Restaurant	Hotel	Art Gallery
4	Chinatown	Chinese Restaurant	American Restaurant	Cocktail Bar	Spa	Dumpling Restaurant	Vietnamese Restaurant	Bubble Tea Shop	Optical Shop	Salon / Barbershop	Ice Cream Shop

# Conclusions and future directions

- ▶ The exploration of Chicago and then the comparison with neighbourhoods of Toronto and Manhattan, NY cite the fact that both US and Canada share a similar cultural and professional outlook with most of the venue categories matching in every department.
- ▶ However there were some anomalies which were unique and to the kind of the respective city, but which also adds as the city identification.
- ▶ All of the explored neighbourhoods depict a high concentration of food joints and restaurants, citing to the fact that the industry is ever expanding and continuing to grow its foothold in one of the biggest and best cities in the world.
- ▶ This exploration is however small and restricted to a few neighbourhoods, but is an indication that it can be extended as we want and is scalable to all extent, in terms of results and amount of analysis which can be carried out.
- ▶ We can use the same Foursquare API or similar to extend our analysis to beyond a few miles and from few neighbourhoods to cities. Focusing our exploration on very specific areas by querying the exact information from these databases to make it a domain specific analysis. At this very moment, this analysis can be used to navigate through these explored neighbourhoods with ease.