WHAT NEIGHBORHOOD NEEDS AN ICE CREAM SHOP?

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INTRODUCTION

- Open an ice cream shop in downtown NYC

- Criteria

  - Not a lot of ice cream shops nearby

  - A lot of restaurants in the area

  - Near a park or outdoor attraction

DATA

- Use NYC neighborhood data including
  - Borough
  - Neighborhood
  - Location
- Use Foursquare for data about venues in the area

METHODOLOGY

- Compared the number of ice cream shops in each of the Boroughs to narrow my search to the one with the lowest amount so I decided to continue my analysis in Manhattan.

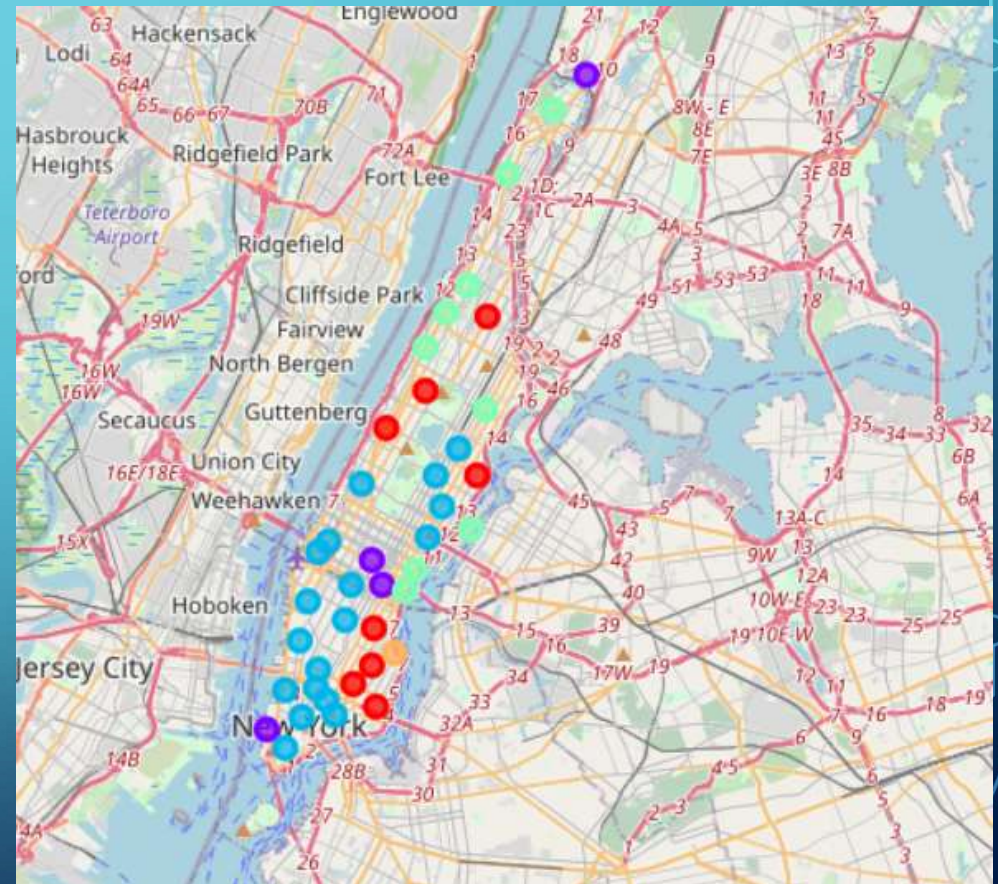|	Borough	Ice Cream Shop
0	Bronx	0.696224
1	Brooklyn	1.224973
2	Manhattan	0.442346
3	Queens	1.401178
4	Staten Island	1.296293

METHODOLOGY

- To compare neighborhoods within Manhattan I found the frequency each venue and decided to view the top 10 venue types n each neighborhood.

	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	Gym	Clothing Store	Memorial Site	Gourmet Shop	BBQ Joint	Boat or Ferry	Food Court
1	Carnegie Hill	Coffee Shop	Café	Bar	Cosmetics Shop	Yoga Studio	Pizza Place	Wine Shop	Italian Restaurant	Bookstore	Gym
2	Central Harlem	African Restaurant	Chinese Restaurant	Bar	French Restaurant	American Restaurant	Seafood Restaurant	Cosmetics Shop	Gym / Fitness Center	Boutique	Ethiopian Restaurant
3	Chelsea	Coffee Shop	Bakery	American Restaurant	Art Gallery	Italian Restaurant	Hotel	Wine Shop	Ice Cream Shop	Seafood Restaurant	French Restaurant
4	Chinatown	Chinese Restaurant	Bakery	Dessert Shop	American Restaurant	Hotpot Restaurant	Cocktail Bar	Salon / Barbershop	Spa	Coffee Shop	Mexican Restaurant

METHODOLOGY

- Used KNN clustering to find areas that are alike with many restaurants and a park.

- Mapped using Folium

RESULTS

- Filtered the list of neighborhoods so we only saw one cluster that had a lot of restaurants

	Neighbourhood	ClusterLabel_left	ClusterLabel	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
216	Washington Heights	3	3	Café	Bakery	Bank	Mobile Phone Shop	Deli / Bodega	Gym	Spanish Restaurant	Sandwich Place	Tapas Restaurant	Chinese Restaurant
217	Inwood	3	3	Mexican Restaurant	Lounge	Restaurant	Café	Chinese Restaurant	Park	Bakery	Deli / Bodega	Pizza Place	Caribbean Restaurant
218	Hamilton Heights	3	3	Pizza Place	Coffee Shop	Café	Mexican Restaurant	Park	Deli / Bodega	Latin American Restaurant	Liquor Store	Sushi Restaurant	Sandwich Place
219	Manhattanville	3	3	Seafood Restaurant	Coffee Shop	Mexican Restaurant	Food Truck	Italian Restaurant	Chinese Restaurant	Bike Trail	Park	Gastropub	Burger Joint
221	East Harlem	3	3	Mexican Restaurant	Sandwich Place	Bakery	Thai Restaurant	Steakhouse	Latin American Restaurant	Deli / Bodega	Spanish Restaurant	Gas Station	Park
225	Roosevelt Island	3	3	Park	Restaurant	Japanese Restaurant	Farmers Market	Liquor Store	Greek Restaurant	Metro Station	Supermarket	Bubble Tea Shop	Bus Line
240	Morningside Heights	3	3	Coffee Shop	Park	American Restaurant	Bookstore	Burger Joint	Café	Sandwich Place	Deli / Bodega	Chinese Restaurant	Seafood Restaurant
249	Turtle Bay	3	3	Italian Restaurant	Coffee Shop	Japanese Restaurant	Sushi Restaurant	Park	Ramen Restaurant	Seafood Restaurant	Café	Deli / Bodega	Hotel
250	Tudor City	3	3	Mexican Restaurant	Park	Deli / Bodega	Café	Coffee Shop	Diner	Sushi Restaurant	Thai Restaurant	Greek Restaurant	Garden

DISCUSSION

- We now have a list of the top nine neighborhoods in Manhattan to open an ice cream shop

- This list will easily be narrowed down when looking for a space to open the shop that is available for rent and the costs in each area.

- Based off the venues alone in each location, I would pick Tudor City with its variety of restaurants and a large number of parks to enjoy your ice cream in.

CONCLUSION

- There is a lot more information to look at when deciding where to open a store, such as costs, population, and condition of the area.

- This short project was a great intro into using Foursquare API and learning how to find and use data sets in a project.