

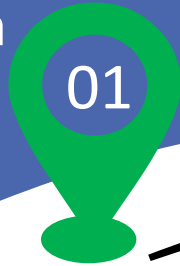
Capstone Project - The Battle of the Neighborhoods (week 2)

use case:

The Bronx (in New York) segmentation and clustering to find the best location for a "fruit and vegetable store"

Agenda

Problem
description



Methodology
and Analysis
using the
dataset



How our
dataset can
be used to
solve this
problem



Results and
business
analysis

Problem description

M Rob Zuntfy the General Manager of a "fruits and vegetable store" doesn't know how to choose the location of his new store.

But he has some constraints and preferences:

- First: he prefers Bedford Park because of many stores there show that this location is a very interesting market place
- Second, in another hand, he is afraid of the competition he will face with the existing stores already established in this place
- Last, M Rob Zuntfy has a preference for locations near bus stations Because his target clients uses bus to move. So that he is looking for another place!

02

How our dataset was used
to solve this problem

I/ Data source and description

To solve the problem described in the introduction section, I used the dataset proposed in this coursera capstone course as shown here: newyork_data.json' https://cocl.us/new_york_dataset.

II/ How the dataset had been used

I have my focus on the Bronx and its neighborhoods.

So I step by step imported the dataset, cleaned it, extracted the useful dataset of it, used the geospatial coordinate of the Bronx and my Foursquare credentials to look at the different stores around the Bronx.

// Methodology working with the dataset: overview

After downloading, loading, exploring and looking into the dataset, I transformed the data into a dataframe with the usefull columns I needed (['Borough', 'Neighborhood', 'Latitude', 'Longitude']).

Then I got the geographical coordinate of the Bronx to create The Bronx's map to have an idea of this map.

I/ Analysis process: overview

1) Importing libraries, downloading, loading and exploring the dataset

Here, I start with the preliminaries actions to have the dataset and be ready to work with it.

(click on [my github book](#) to view the different codes for more details)

I/ Analysis process: overview

2) Plotting The Bronx map

Note: The blue points
shows the neighborhoods
of The Bronx



Methodology and Analysis using the dataset

1/ Analysis process: overview

2) The 50 top venues in 300m radius

	Neighborhoods	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
1	Allerton	64	64	64	64	64	64
2	Baychester	40	40	40	40	40	40
3	Bedford Park	16	16	16	16	16	16
4	Belmont	148	148	148	148	148	148
5	Castle Hill	16	16	16	16	16	16

For more details click [here](#)

I/ Analysis process: overview

3) The most common venues in The Bronx

This analysis will be helpful to know where the suitable and best places are, regarding the type of activity we can find there.

So these categorizations will give opportunity to advise M Rob Z in choosing the right place/best location to establish his fruit and vegetable store

Methodology and Analysis using the dataset

3) The most common venues in The Bronx

N°	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
1	Allerton	Pizza Place	Chinese Restaurant	Deli Bodega /	Electronics Store	Breakfast Spot	Fast Food Restaurant	Discount Store	Department Store	Martial Arts Dojo	Donut Shop
2	Baychester	Discount Store	Mattress Store	Bus Station	Donut Shop	Baseball Field	Spanish Restaurant	Bank	Sandwich Place	Pizza Place	American Restaurant
3	Bedford Park	Deli Bodega /	Fruit & Vegetable Store	Chinese Restaurant	Donut Shop	Wings Joint	Fast Food Restaurant	Cupcake Shop	Dance Studio	Department Store	Dessert Shop
4	Belmont	Italian Restaurant	Deli Bodega /	Pizza Place	Dessert Shop	Liquor Store	Food Drink Shop &	Grocery Store	Bar	Piano Bar	Diner
5	Castle Hill	Pharmacy	Diner	Spanish Restaurant	Market	Wings Joint	Event Space	Cosmetics Shop	Cupcake Shop	Dance Studio	Deli Bodega /

I/ Clustering results

1) The 2nd cluster shows "Fieldson" neighborhood and its most common venues

	Neighborhood	1st Common Venue	Most	2nd Common Venue	Most	3rd Common Venue	Most	4th Common Venue	Most
3	Fieldston	Plaza		Bus Station		River		Wings Joint	
55	Fieldston	Plaza		Bus Station		River		Wings Joint	
107	Fieldston	Plaza		Bus Station		River		Wings Joint	
159	Fieldston	Plaza		Bus Station		River		Wings Joint	

For more details click [here](#)

I/ Clustering results

2) The 3rd cluster shows "Fruit and Vegetable stores" and other most common places of activity in each neighborhood

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
12	Bedford Park	Deli / Bodega	Fruit & Vegetable Store	Chinese Restaurant	Donut Shop
13	University Heights	Deli / Bodega	Wings Joint	Food Truck	Chinese Restaurant
32	Morris Park	Deli / Bodega	Donut Shop	Wings Joint	Gym
38	Edgewater Park	Deli / Bodega	Park	Bus Station	Cupcake Shop

For more details click [here](#)

Clustering results

3) The 4th cluster shows "Country Club" most common venues

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
28	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint	Fast Restaurant Food
80	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint	Fast Restaurant Food
132	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint	Fast Restaurant Food
184	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint	Fast Restaurant Food

For more details click [here](#)

III/ Results and comments

The different clusters put forward these main points:

1. As M Rob first preference is to locate his Fruit and Vegetable store in Bedford Park, this option looks fine, because the 3rd cluster tells us that Bedford Park is among the most 2nd common places

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
12	Bedford Park	Deli / Bodega	Fruit & Vegetable Store	Chinese Restaurant

For more details click [here](#)

III/ Results and comments

2. With the Bus station constraints, M Rob Z can locate his future fruit and store in Fieldson neighborhood.
And there, he will have the chance to create the first such of store

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
3	Fieldston	Plaza	Bus Station	River
55	Fieldston	Plaza	Bus Station	River
107	Fieldston	Plaza	Bus Station	River
159	Fieldston	Plaza	Bus Station	River

For more details click [here](#)

III/ Results and comments

3. Another good option for M Rob Z is to create his fruit and vegetable store in Country Club neighborhood which is a place with the most common Vegetarian/Vietnam Restaurant; as shown by the 4th cluster. These restaurants can also be M Rob Z's store clients!

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
28	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint
80	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint
132	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint
184	Country Club	Vegetarian / Vegan Restaurant	Sandwich Place	Wings Joint

Thank you