1. Introduction

1.1 Background

In this project we will try to find a best location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening an restaurant in new York or Toronto

Since there are lots of restaurants in New York or Toronto

we will try to detect locations that are not already crowded with restaurants. We are also particularly interested in areas with no Italian restaurants in vicinity. We would also prefer locations as close to city center as possible, assuming that first two conditions are met.

We will use our data science powers to generate a few most promising neighborhoods based on this criterion. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

1.2 Problem

try to find a best location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening an restaurant in new York or Toronto

2. Data acquisition and cleaning

2.1 Data sources

Based on definition of our problem, factors that will influence our decision are:

number of existing restaurants in the neighborhood (any type of restaurant)

number of and distance to Italian restaurants in the neighborhood, if any

distance of neighborhood from city center

We decided to use regularly spaced grid of locations, centered around city center, to define our neighborhoods.

Following data sources will be needed to extract/generate the required information:

centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be

number of restaurants and their type and location in every neighborhood will be obtained using Foursquare API

Methodology section

After creating data frame then Loading Geospatial data and Obtaining latitude and longitude of each postal code

Adding Latitude and Longitude details to the data frame

	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.718518	-79.464763
4	M7A	Queen's Park	Ontario Provincial Government	43.662301	-79.389494

Then Creating a data frame containing the neighborhoods of North York

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	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
1	M5B	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937
2	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418
3	M4E	East Toronto	The Beaches	43.676357	-79.293031
4	M5E	Downtown Toronto	Berczy Park	43.644771	-79.373306
5	M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383
6	M6G	Downtown Toronto	Christie	43.669542	-79.422564
7	M5H	Downtown	Richmond,	43.650571	-79.384568

Then Creating a function that returns 100 venues of each neighborhood Obtaining the venues of each neighborhood of Toronto city Then Obtaining the venues of each neighborhood of North York then Grouping the data using Venue category

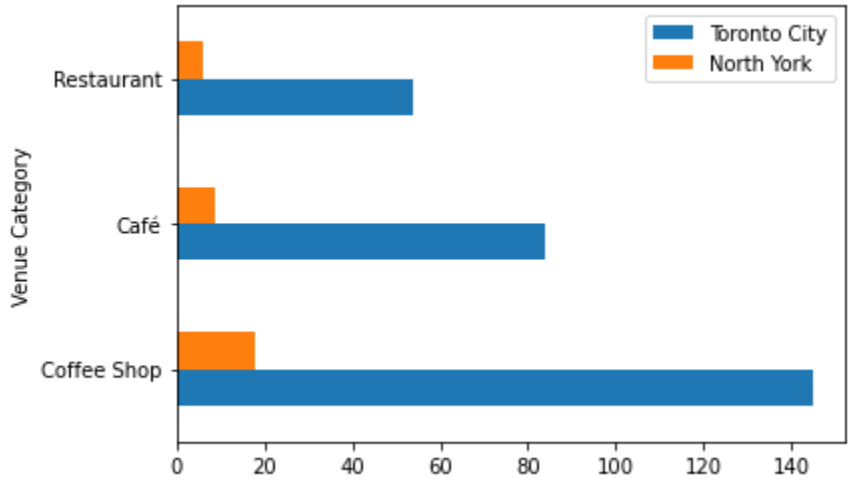
Extracting the total number of Coffee shops, Restaurants and cafes

	Venue Category	Total
0	Coffee Shop	145
1	Café	84
2	Restaurant	54

Combining those two data frames

	Venue Category	Total
0	Coffee Shop	18
2	Restaurant	9
9	Café	6

Visualizing the results



Results section

The city of build new restaurant is Toronto city

Discussion section

Due to Toronto city greater than New York my recommendation is Toronto city

Conclusion section

The Toronto city citizens love drinking coffee more than fast food if business owner builds something else my recommendation is coffee shop