Coursera Capstone Project

Battle of the Neighborhoods : Best Mexican Dining in NYC

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1. Introduction

i.   Background

New York City has a vast population of people with a wide array of demographics living within its boroughs. It is the largest metropolitan city in the United States and has been a focal point of international immigration and trade in the Modern world. As of 2018 this population of NYC has reached 8.4 million people, accounting for 40% of the population of the state of New York with 36% of the city being foreign born. New York has been a stalwart of immigration and as a result has embodied the term "melting pot" with countless cultures bringing their customs and cuisines as they move to the city to seek a new life.

Problem

With so many choices in cuisines and choices for travelers and locals to choose from, it can be tough to narrow down establishments that serve quality food with a good experience and atmosphere, so this project will use available data to find where the highest rated Mexican restaurants are in NYC. I chose Mexican cuisine for its simplicity in variety and popularity in nature among United States citizens.

Data

For this project we need the following data :

New York City data that contains list Boroughs, Neighborhoods along with their latitude and longitude.
  - Data source : https://cocl.us/new_york_dataset
  - Description : This data set contains the required information. And we will use this data set to explore various neighborhoods of new York city.
Mexican restaurants in each neighborhood of NYC
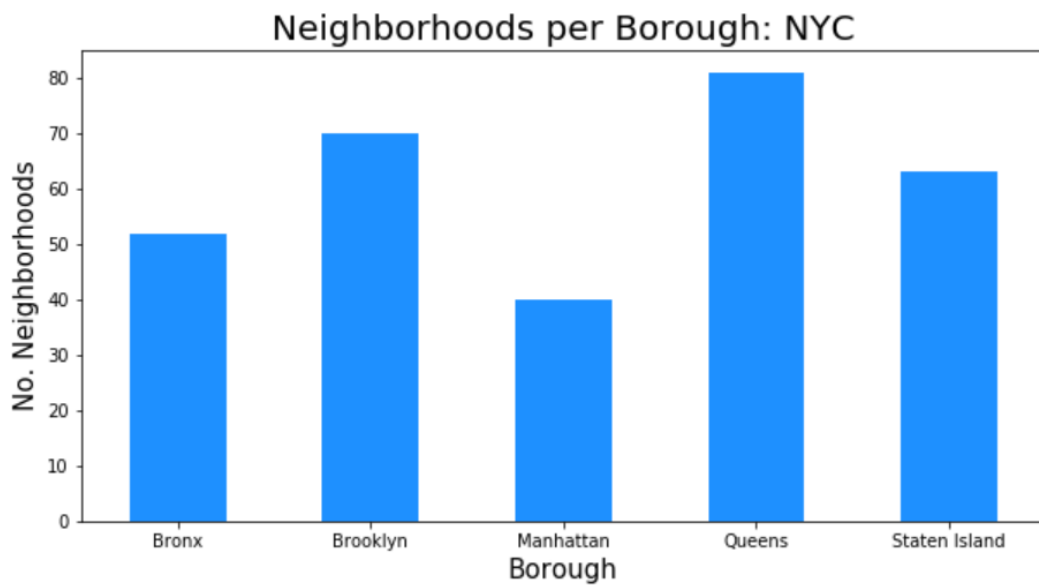 - Data source : Foursquare API
  - Description : By using this api we will get all the venues in each neighborhood. We can filter these venues to get only Mexican restaurants.
  - Data source : https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm
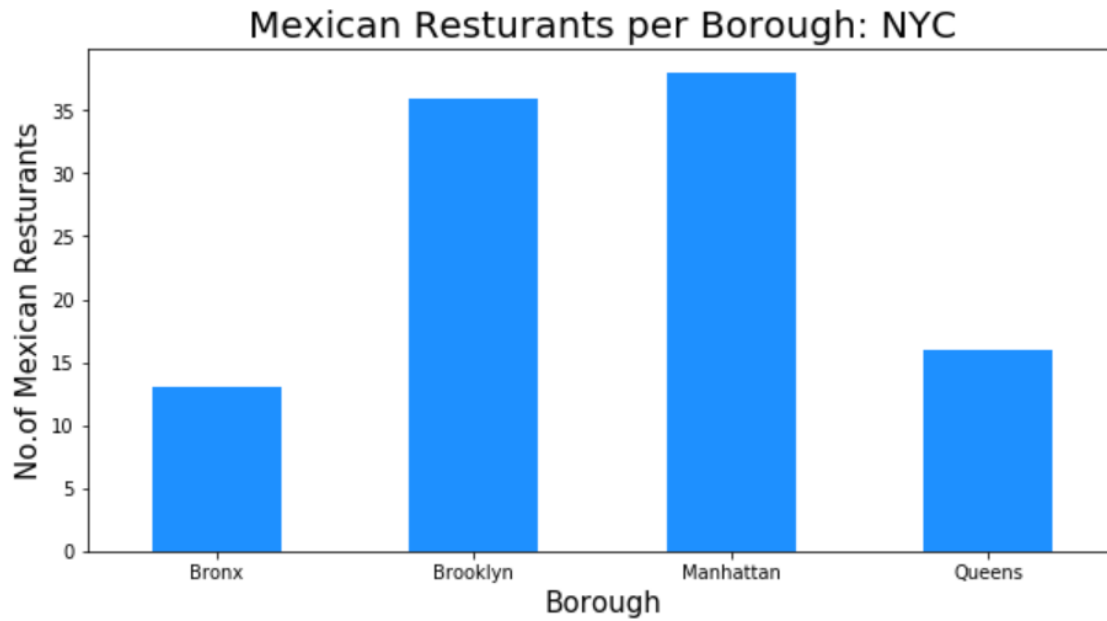
The data regarding the cities neighborhoods and boroughs was scraped from the City of New York public data set. This information was used to outline the map and help us track down which boroughs had the highest population density. The second portions of the Data regarding the restaurants were taken from a GET request to Foursquare API.
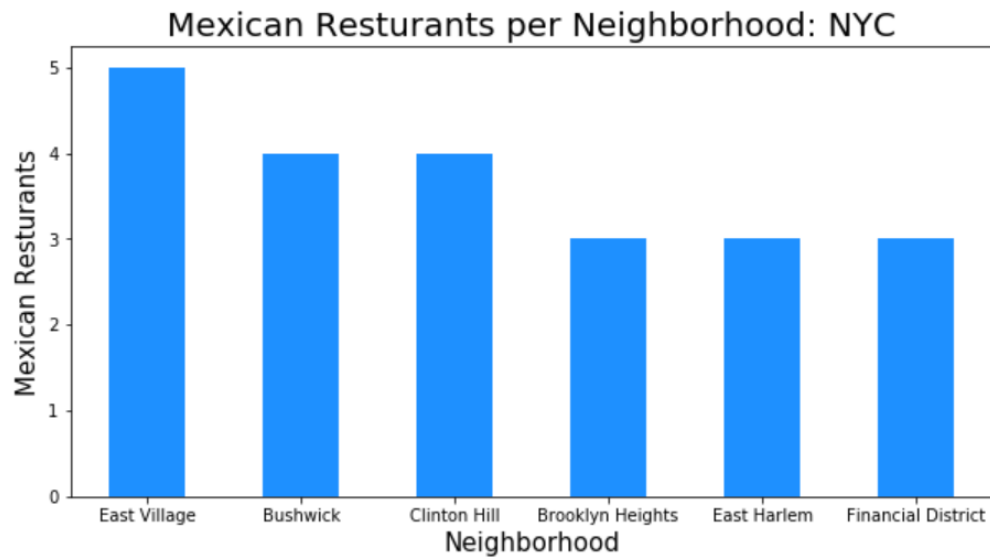
DATA CLEANING.
The data from the City was scrubbed and organized into a table per population density, then based on Neighborhoods/Borough. Once organized, the data was visualized thru a bar graph (pictured below) which outlined Queens, Brooklyn and Staten Island as the most populous Boroughs per Neighborhood.

Once this Data foundation was set, the Foursquare API was called to search for 'Mexican' or related cuisine restaurants per neighborhood. Data returned 103 locations, subsequently scrubbed and graphed to visualize the number of Mexican restaurants available per borough.

Mexican Resturants per Borough: NYC

The Data was then refined to search per neighborhood within each borough and organize by highest amount, then visualized on graph and a coordinating table showing the names and ID of all available restaurants.

Mexican Resturants per Neighborhood: NYC

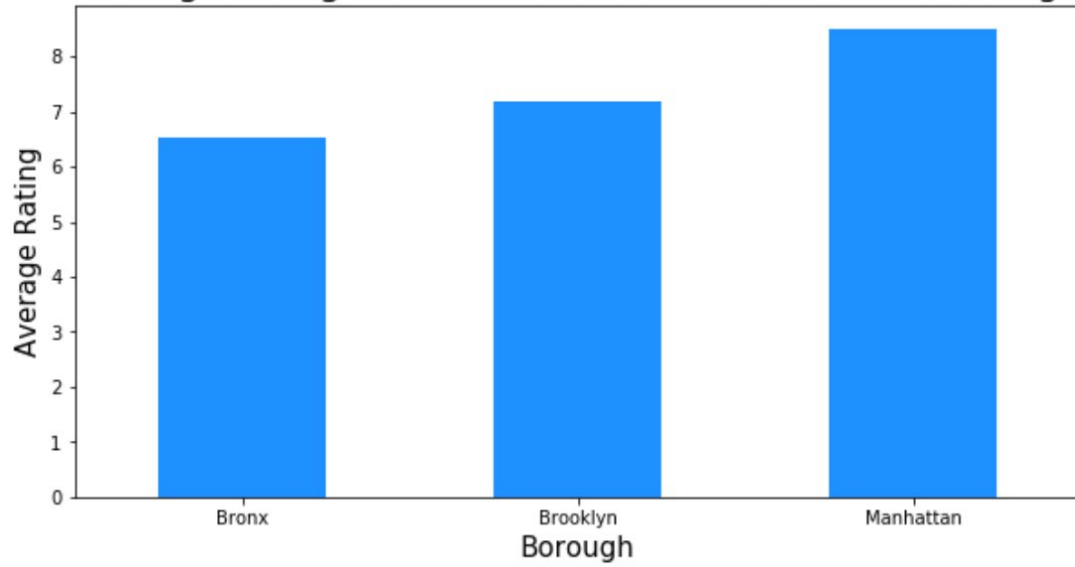|	Borough	Neighborhood	ID	Name
69	Manhattan	East Village	544153df498e8f7dae118d8e	Empellón Al Pastor
70	Manhattan	East Village	4d322023c75a6ea8cc220bae	El Camion Cantina
71	Manhattan	East Village	54f90055498e6ce6a801f8f3	Taqueria St. Marks
72	Manhattan	East Village	5209469f11d2d4f85e5b7427	Tacos Cuautla Morelos
73	Manhattan	East Village	49e80026f964a52037651fe3	Zaragoza Mexican Deli-Grocery

The Data frame was then further refined to search and rank locations based on Likes, Tips and Ratings, these three factors are the most common ways customers voice their pleasure or lack thereof towards a dining establishment. Using this information the data was ranked based on average rating per neighborhood and per borough.

	Neighborhood	Average Rating
23	Parkchester	9.200000
19	North Side	8.600000
5	Chinatown	8.500000
30	Westchester Square	8.400000
14	Greenpoint	8.266667
15	Kensington	8.100000
4	Bushwick	7.950000
25	Prospect Heights	7.933333
11	Fort Greene	7.900000
28	South Side	7.800000

	Borough	Average Rating
2	Manhattan	8.500000
1	Brooklyn	7.169444
0	Bronx	6.523077

The data was then visualized on a graph to view the final results, and the 5 highest ranked venues were mapped using Folium

Average rating of Mexican Resturants for each Borough

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Manhattan	Chinatown	40.715618	-73.994279	8.500000
1	Brooklyn	Greenpoint	40.730201	-73.954241	8.266667
2	Brooklyn	Kensington	40.642382	-73.980421	8.100000
3	Brooklyn	North Side	40.714823	-73.958809	8.600000
4	Bronx	Parkchester	40.837938	-73.856003	9.200000
5	Bronx	Westchester Square	40.840619	-73.842194	8.400000

CONCLUSION.

The Data frame reveals that Manhattan has the most available Mexican Venues, with the highest rated in its neighborhood of Chinatown. Brooklyn and the Bronx are second and third respectively in frequency yet are tied for first in quality. These two boroughs hold more higher rated and liked restaurants than Manhattan. So for travelers the data recommends that to enjoy quality Mexican cuisine, Brooklyn and Manhattan are the Boroughs with Chinatown, Greenpoint and Kensington as the highest rated neighborhoods.