

An aerial photograph of the New York City skyline at sunset. The Empire State Building is the central focus, its spire reaching towards a sky filled with golden and blue clouds. The city's dense grid of skyscrapers is visible, with many windows glowing with interior lights. The Hudson River and the New York Harbor are visible in the background, with some ships and bridges in the distance.

Data Science

Restaurant Location
in New York
Capstone Project
Alexander Frieve

INTRODUCTION

New York City's demographics show that it is a large and ethnically diverse metropolis. It is the largest city in the United States with a long history of international immigration. New York City was home to nearly 8.5 million people in 2014, accounting for over 40% of the population of New York State and a slightly lower percentage of the New York metropolitan area, home to approximately 23.6 million. Over the last decade the city has been growing faster than the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States.

Throughout its history, New York City has been a major point of entry for immigrants; the term "melting pot" was coined to describe densely populated immigrant neighborhoods on the Lower East Side. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world. English remains the most widely spoken language, although there are areas in the outer boroughs in which up to 25% of people speak English as an alternate language, and/or have limited or no English language fluency. English is least spoken in neighborhoods such as Flushing, Sunset Park, and Corona.

Opening a new restaurant could prove to be a challenge in any city in the world. The aim of this project is to determine the balance between location, attraction and competition. We want the location to be suitable for the restaurant, while trying to avoid unnecessary competition for this niche cuisine to ensure the profit is maximized.

To find the best spot, we need to analyze the neighborhoods of New York, the location of other restaurants and the most important attractions

An aerial photograph of New York City, showing the harbor, the Manhattan skyline with numerous skyscrapers, and the surrounding urban landscape. The sky is filled with large, dramatic clouds.

DATA

United States[®]
Census
Bureau

FOURSQUARE

Methodology

- Identification of coordinates (latitudes and longitudes) for individual neighbourhoods using 'geocoder' package.
- Using 'Foursquare' location data to figure out venue details.
- Filtering and categorizing restaurants.
- Merging and superimposing data sets to create a map representative of neighbourhoods with most number of restaurants which offer different cuisine.

RESULTS

Sorted list by place rating

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re2_neighborhoods.head( 20)  
#re1_neighborhoods.shape
```

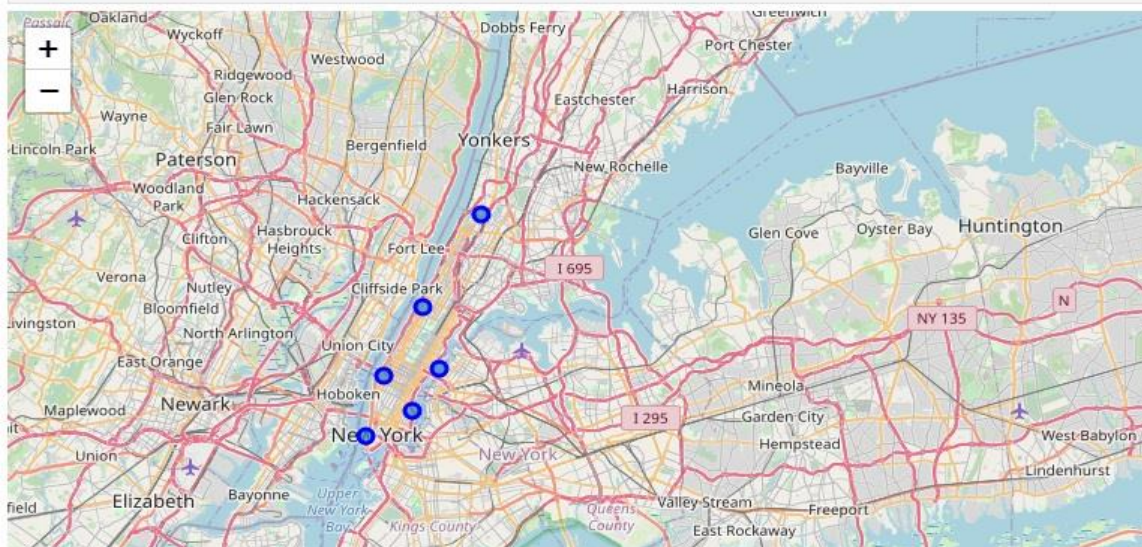
[20]:	index	Borough	Neighborhood	Latitude	Longitude	restaurants	Gross Domestic Product	Population	Rating
0	275	Manhattan	Stuyvesant Town	40.731000	-73.974052	1	600.244	1628701	108466681
1	6	Manhattan	Marble Hill	40.876551	-73.910660	2	600.244	1628701	97634173
2	110	Manhattan	Roosevelt Island	40.762160	-73.949168	3	600.244	1628701	88768875
3	127	Manhattan	Battery Park City	40.711932	-74.016869	3	600.244	1628701	88768875
4	301	Manhattan	Hudson Yards	40.756658	-74.000111	9	600.244	1628701	57462756
5	125	Manhattan	Morningside Heights	40.808000	-73.963896	10	600.244	1628701	54272697
6	126	Manhattan	Gramercy	40.737210	-73.981376	11	600.244	1628701	51418203
7	112	Manhattan	Lincoln Square	40.773529	-73.985338	13	600.244	1628701	46524278

Map best places for restaurants

NY_DATA_00.ipynb

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[29]:



Discussion

For more precise determination of the best location for new restaurant, need additional data, for example, the cost of renting buildings.



An aerial photograph of New York City, showing Central Park and the Hudson River. The word "Conclusion" is written in large, blue, outlined letters across the top of the image.

Conclusion

Finding the best location for a new restaurant is no easy task. However, relying on easily available data, we made this task a lot easier.

A wide-angle photograph of the New York City skyline at sunset. The sky is a clear, pale blue, and the sun is low on the horizon, casting a warm, golden glow over the scene. The city's skyscrapers, including the Empire State Building, are silhouetted against the sky, with their windows reflecting the low light. The water in the foreground is dark blue, with the golden light reflecting off its surface. Several boats are visible in the water, including a large ferry in the center and a smaller boat in the foreground. The overall mood is peaceful and celebratory.

Thank you!

