Coursera Capstone Project

Battle of Neighbourhoods

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Introduction: Business Problem

Abstract Idea   Indian cuisine is very coveted and sought after for the Indians residing in New York and this has led to the establishment of many restaurants serving Indian cuisine. The biggest problem that these Indian restaurants in New York face is the lack of easy availability of authentic raw materials to prepare the dishes, because Indian cuisine depends heavily on the availability of authentic raw materials. Due to lack of this, the Indian restaurants have to spend a substantial amount of money for the procurement of the raw materials which eats into their profits.

   This project deals with the analysis of the Boroughs and Neighbourhoods of New York to find most efficient locations to set up stores that would supply raw materials for Indian restaurants, based on the density of already established Indian restaurants in those areas. The stores can be set up at convenient and strategic locations based on the insights provided by this project.

Target Audience: The primary target audience of this project are the companies that provide raw food materials to restaurants. They can greatly benefit from the insights provided by this project if they want to set up stores in New York.

Data Section

For this project, I have taken the data of the Boroughs and Neighbourhoods of New York from the link: https://cocl.us/new_york_dataset

I have used Foursquare API to get the list of Indian Restaurants in New York, along with their latitudes and longitudes.

I have got the Category ID of Indian Restaurants to be able to run my query in Foursquare API from the link: https://developer.foursquare.com/docs/build-with-foursquare/categories
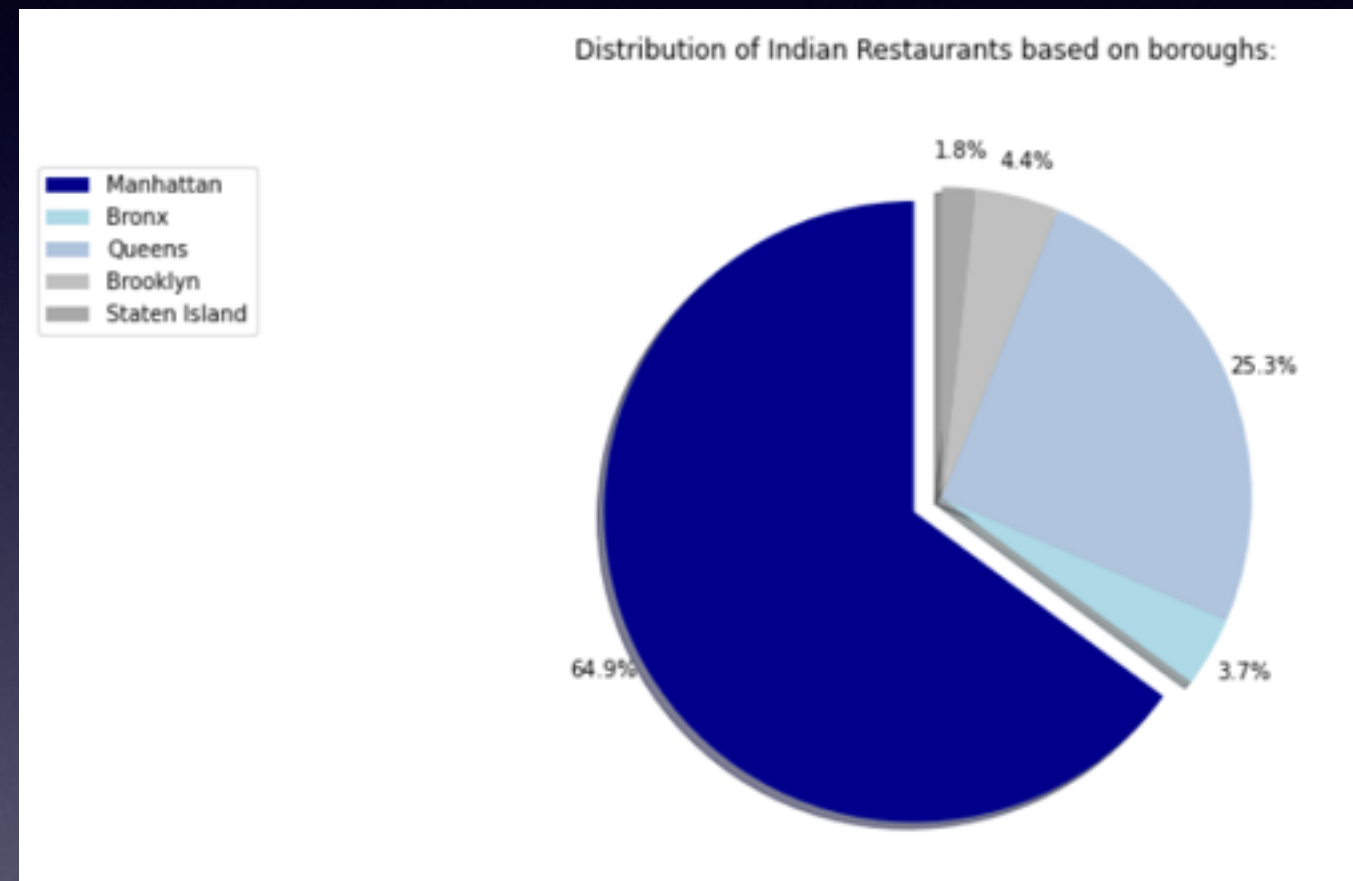
Methodology

New York is divided into five main Boroughs, namely- Manhattan, Bronx, Queens, Brooklyn and Staten Island. These boroughs are further divided into multiple neighbourhoods. So, we have first analysed the density of Indian restaurants that are present in each borough using data available from https://cocl.us/new_york_dataset and Foursquare API, which helped me fetch location details of Indian restaurants in New York.

I have then developed the map of these restaurants superimposed on the New York map using Folium. I have performed a heat-map analysis of the Indian restaurants to find density clusters. I have also fetched the count of Indian restaurants of each neighbourhood to identify strategic locations best suitable to set up stores to provide raw food materials for Indian restaurants in New York.

Results

Segmenting the number of Indian restaurants present in New York based on boroughs, we find that the borough Manhattan has almost 65 percent of total Indian restaurants of New York.
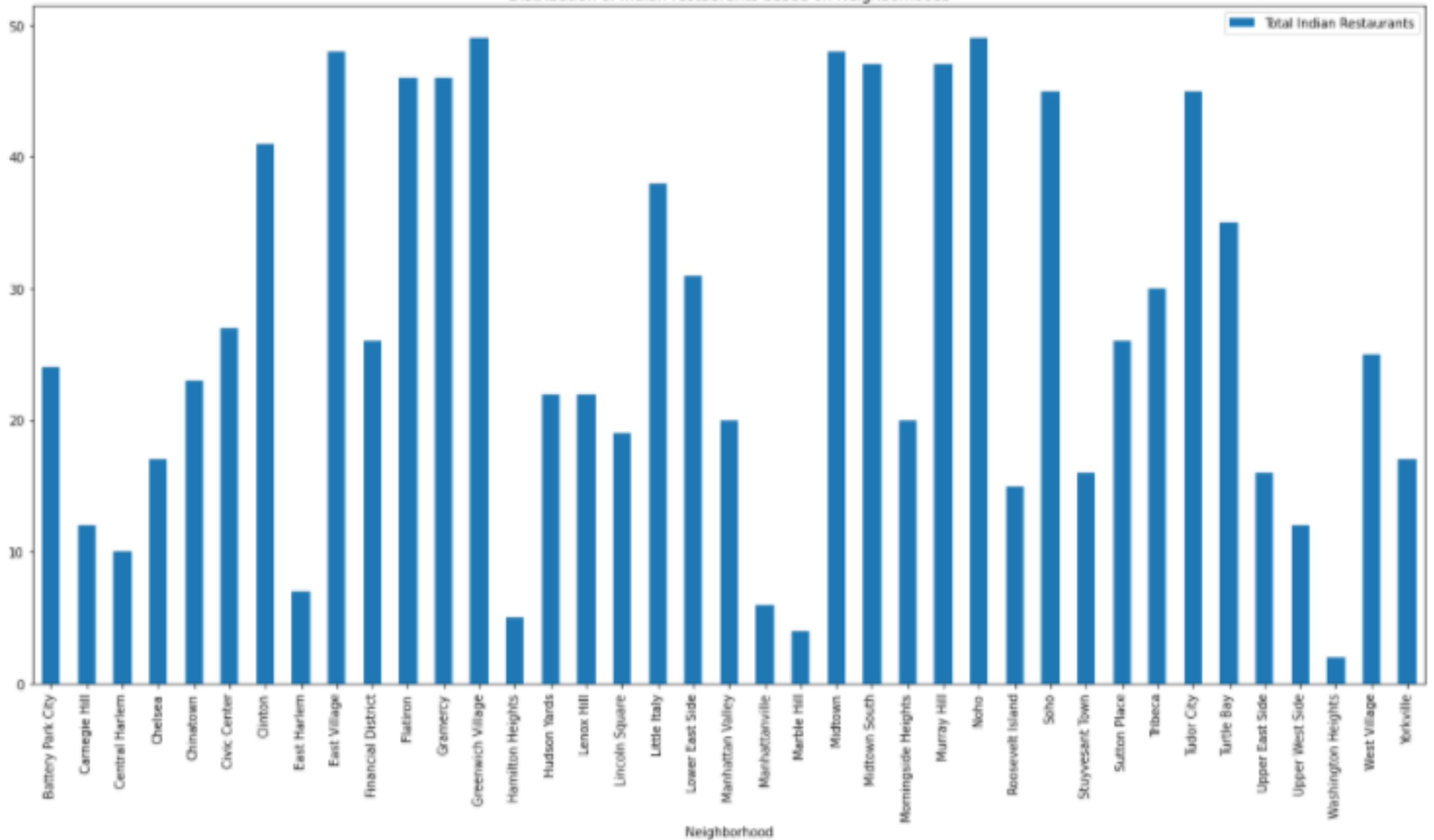
Hence, it is advisable to work on Manhattan as it has more Indian restaurants than all other boroughs combined. Borough Manhattan is clearly the hotspot of Indian restaurants in New York.

Distribution of Indian Restaurants based on boroughs:

- Manhattan
- Bronx
- Queens
- Brooklyn
- Staten Island

1.8% 4.4%
25.3%
3.7%
64.9%

We have then analysed the various neighbourhoods within Manhattan to find areas with highest count of Indian restaurants. We find that the top five neighbourhoods are Greenwich Village, Noho, Midtown, East Village and Murray Hill with the respective numbers of total Indian restaurants as below:

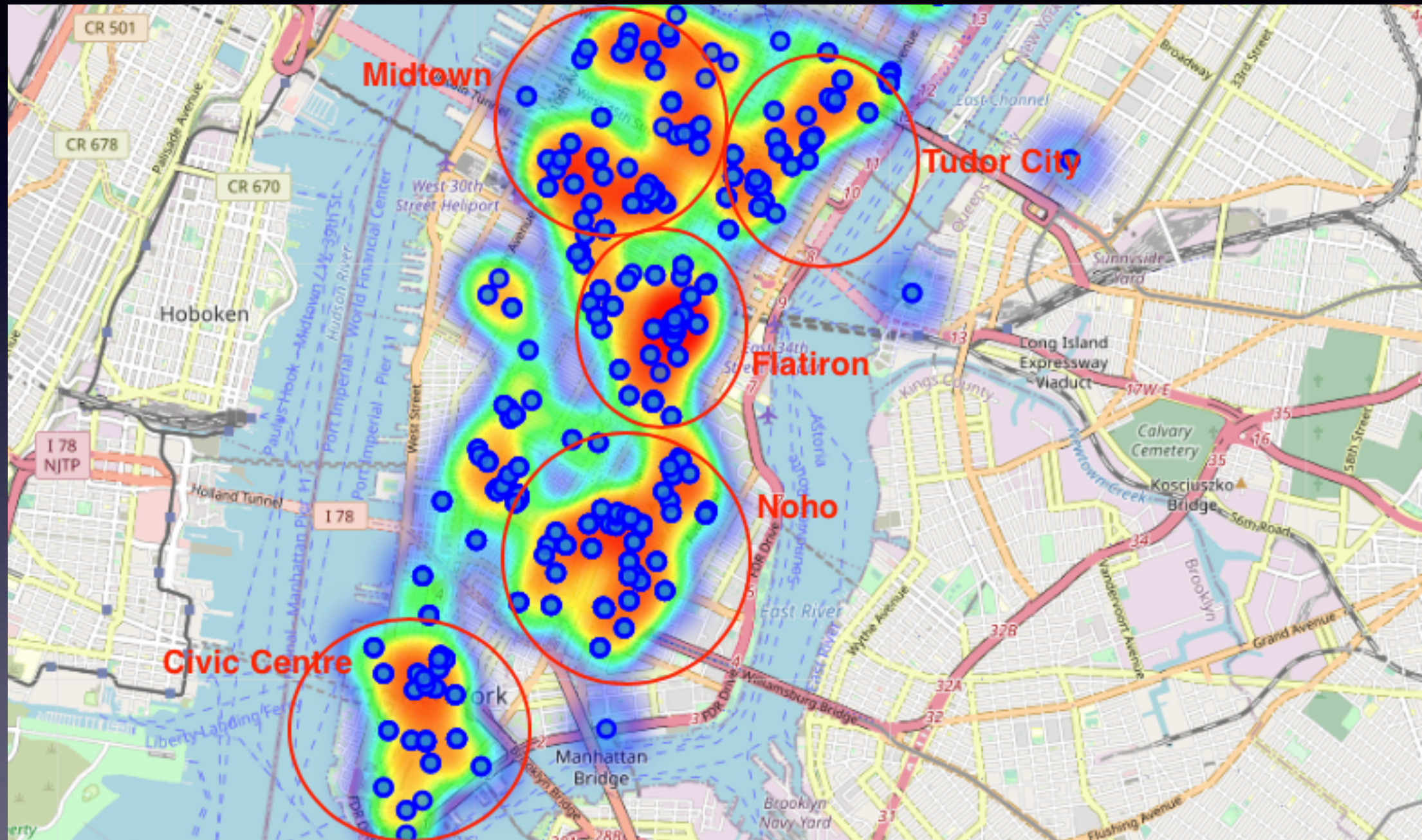| Neighborhood	Total Indian Restaurants
Greenwich Village	49
Noho	49
Midtown	48
East Village	48
Murray Hill	47

Distribution of Indian restaurants based on neighbourhoods

We have analysed the location of Indian restaurants in the neighbourhoods using Folium and have got the below data:

After analysing the venues with the help of a heat map, we get the following:

From the heat maps, we find that the most neighbourhoods having the highest density of Indian restaurants are:

- NoHo
- Civic centre
- Flatiron
- Midtown
- Tudor City

Conclusion and Discussion

Combining the table with highest count of Indian restaurants with the hat maps, we see that NoHo and Midtown has the highest number of Indian restaurants and that too in a very dense cluster. Thus NoHo or Midtown is the best place to set up a store for raw food materials distribution to Indian restaurants.

If a company has the ability to target a great number of restaurants which might not be very close to each other, they can set up there stores in Greenwich village which has the joint highest number of Indian restaurants, sharing with NoHo.
On the other hand, a small scale company can set up their store at Civic Centre or Flatiron which, even though has fewer Indian restaurants, has them densely clustered.

Combining both quantity and density analysis, **NoHo** and **Midtown** comes out to be the two most favourable places to set up stores to supply raw food materials for Indian restaurants in New York.

Thank You