Coursera Capstone Project: The Battle of Neighborhoods

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Abstract

In this capstone project, the machine learning to figure out a good location to open a new Indian restaurant.

Contents

I. Introduction

In such a diverse city like New York, it will be very difficult to open up an Indian restaurant business. The contractor has given me advice and to draw up a place in which the restaurant will be profitable and that there must be enough customers for the business. If an Indian restaurant were to be open, it is most likely not a good setting to open up an Indian restaurant close by to existing ones. The contractor will draw up good places to open up an Indian store by sales-forecasting and also to have back-up plans.

II. Data

First of all, data must be collected of the Indian restaurants in New York by their name, id, and location (which includes longitude and latitude). This data comes from geolocation data collected from FourSquare. Other metadata that will be collected will be the postal code of the location of the collected data. Using the collected data, it will be used to predict an appropriate location of the new Indian store in the city.

Out[30]:

	uid	name	shortname	address	postalcode	lat	lng
0	52a1fa08498ede15b1530912	Deep Indian Kitchen	Indian	[25 W 23rd St (btwn 5th & 6th Ave), New York, ...	10010	40.742025	-73.990558
1	55cd1f1b498e80ec8d2ec916	INDAY	Indian	[1133 Broadway, New York, NY 10010, United Sta...	10010	40.743836	-73.989399
2	4d59e9e1c88da1cd92803f68	Junoon	Indian	[27 W 24th St (Btw 5th Ave. & 6th Ave.), New Y...	10010	40.743057	-73.991002
3	5287e35711d2ab3ea77f7ebb	Bombay Sandwich Co.	Indian	[48 W 27th St (btwn Broadway & 6th Avenue), Ne...	10001	40.745184	-73.990644
4	4a70a75bf964a52016d81fe3	Bhatti Indian Grill	Indian	[100 Lexington Ave (at E 27th St), New York, N...	10016	40.742065	-73.982983

Table: First Five Rows used my machine learning algorithm

Data is used by figuring out locations of existing India restaurants and determine the density as well as starting a new Indian restaurant with a good approximated distance from existing restaurants.

III. Methodology

Used a regular map to locate the Indian restaurants first. Then used a heatmap to visualize the volume of Indian restaurants in the certain place. The heatmap will be helpful to cluster the amount of Indian stores and its density in the neighborhood.
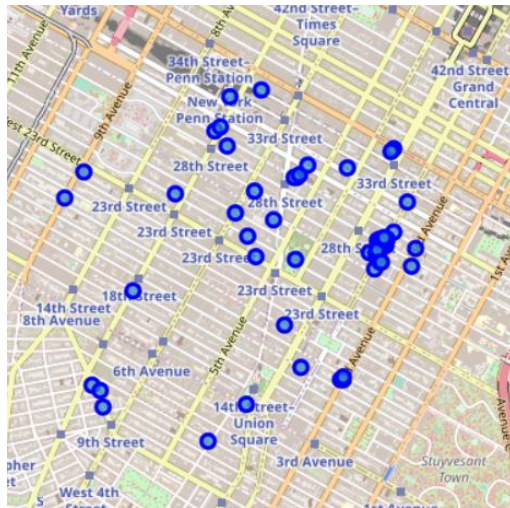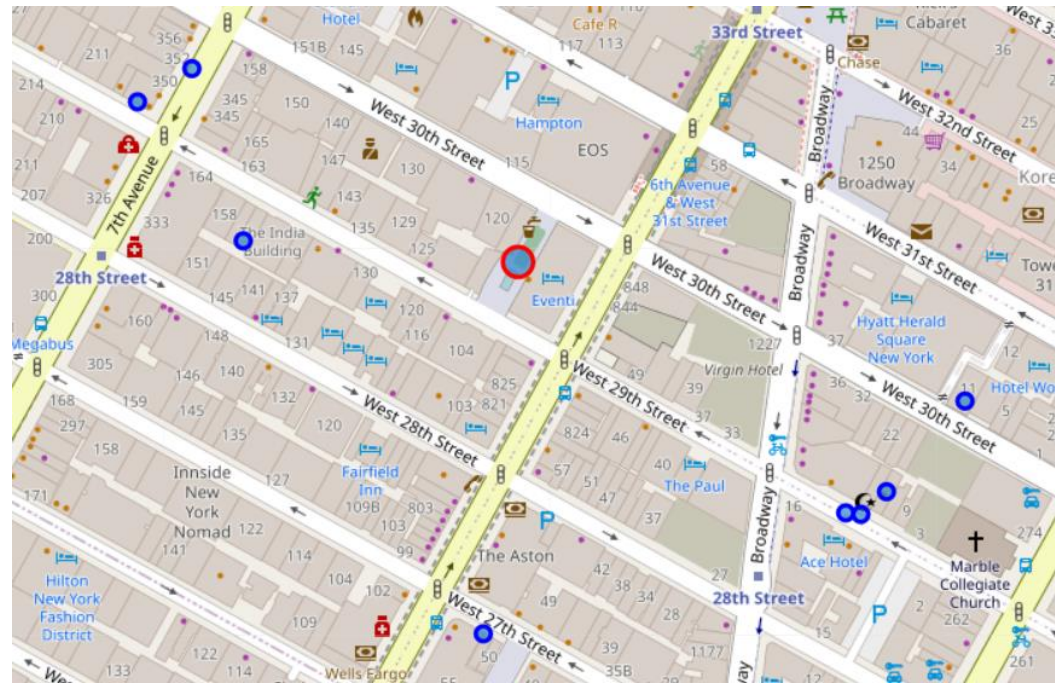

Regular Map
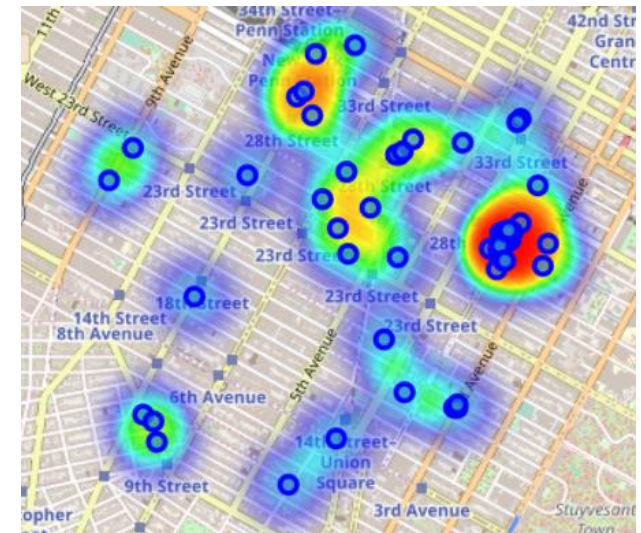
Heatmap

IV. Results

One location that has been decided to open up an Indian restaurant has a good approximation of distance with the existing Indian restaurants.

Map: Proposed location for opening a new Indian restaurant.

V. Analysis

Further research is necessary. Before opening up in the proposed location, further data analysis such as sales-marketing and forecasting as well as location and much more of the location is required.

VI. Conclusion

The proposed location is necessary in which it has enough customers from the location but also away from a certain distance from existing businesses in order to avoid business competition. The location for the new Indian restaurant is estimated by given data from FourSquare.