

Capstone Project - The Battle of Neighborhoods (Week 1)

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1. A description of the problem and a discussion of the background

Introduction:

My Use Case: I am working @ XYZ Company and residing in Schaumburg, Chicago area. My location is walking distance from Woodfield mall and very close to all basic required amenities. I enjoy many amenities and venues in the area, such as various international and Indian restaurants, cafes, food shops and entertainment. I have been offered a great opportunity to work for a same company XYZ in New York City. I am excited and I want to use this opportunity to trail run what I have had learned so far in Coursera in order to get answer to relevant potential questions. Question could be how can I find a convenient and enjoyable place like I have in Schaumburg, Chicago? Idea is to use and apply my learning during the course. In order to make a comparison and evaluation of the rental options in NY, I must set some basis, therefore the apartment in NY must meet the following demands:

- Apartment must be 1 bedrooms
- Location is near a metro station in the NY suburb and within 1.0 mile
- Price of rent not exceed \$XXXXXX per month
- Amenities in the neighborhood should be similar to current residence
- Venues such as coffee shops, Indian restaurants, gym and Asian food shops
- I have included a map of venues near current residence in Schaumburg, Chicago.

Problem Statement:

The challenge is to find a suitable apartment/studio for rent in or around NY city that complies with the demands on location, price and venues. The data required to resolve this challenge is described in the following section

2. A description of the data and how it will be used to solve the problem

Data Section: Description of Data

The following data is required to answer the issues of the problem:

- List of Boroughs and neighborhoods of NY with their GeoData (latitude and longitude)
- List of Metro stations/Bus Station in and around NY with their address location
- List of apartments for rent in surrounding area with their addresses and price
- List of apartment for rent with additional information, such as price, address, area
- Venues for each neighborhood

How the data will be used to solve the problem

The data will be used as follows:

- Use Foursquare and GeoPy data to map top 10 venues for all neighborhoods and clustered in groups
- Use foursquare and GeoPy data to map the location of subway metro stations , separately and on top of the above clustered map in order to be able to identify the venues and amenities near each metro station, or explore each subway location separately
- Use Foursquare and GeoPy data to map the location of rental places
- Create a map that depicts the average rental price around a radius of 1.0 mile around each subway station
- Addresses from rental locations will be converted to GeoData (latitude and longitude) using GeoPy -distance and Nominatim.
- Data will be searched in open data sources if available, from real estate sites if open to reading, libraries or other government agencies such as Metro New York MTA, etc.

The processing of these data will allow to answer the key questions to make a decision:

- What is the cost of apartment rent around a mile radius from each subway metro station?
- What is the area of suburb with best rental pricing that meets criteria established?
- What is the distance from work place and the tentative future home?
- What are the venues of the two best places to live?
- How venues distribute among neighborhoods and around metro stations?
- Any other interesting statistical data findings of the real estate and overall data.

Reference of venues around current residence in Schaumburg , Chicago for comparison to NY City/New Place

	name	categories	lat	lng
0	Maxfield's Pancake House	Breakfast Spot	42.029146	-88.061800
1	Schaumburg Prairie Center for the Arts	Performing Arts Venue	42.025993	-88.067020
2	Bawarchi Biryani Point	Indian Restaurant	42.027498	-88.059736
3	Volkering Heritage Farm	Farm	42.023838	-88.061172
4	Patel Brothers	Grocery Store	42.027654	-88.059611
5	Baskin-Robbins	Ice Cream Shop	42.027741	-88.059312
6	The UPS Store	Shipping Store	42.027485	-88.059264
7	Redbox	Video Store	42.028480	-88.061477
8	Dunkin'	Donut Shop	42.027776	-88.059315
9	Walgreens	Pharmacy	42.028743	-88.061441
10	Clay Oven	Indian Restaurant	42.027409	-88.059532
11	Schaumburg Liquors	Convenience Store	42.027790	-88.060036
12	Schaumburg and Plum Grove Intersection	Intersection	42.028094	-88.060465
13	Septemberfest Craft Fair	Art Gallery	42.025576	-88.068764

Map of Schaumburg Chicago with venues near residence place - for reference

