

Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods (Week 1)

Important Information

It is especially important to submit this assignment before the deadline, May 4, 1:59 AM -05, because it must be graded by others. If you submit late, there may not be enough classmates around to review your work. This makes it difficult - and in some cases, impossible - to produce a grade. Submit on time to avoid these risks.

Instructions

1. Give your project a descriptive title
2. Clearly define a problem or an idea of your choice, where you would need to leverage the Foursquare location data to solve or execute. Remember that data science problems always target an audience and are meant to help a group of stakeholders solve a problem, so make sure that you explicitly describe your audience and why they would care about your problem.

This submission (week 1) will eventually become your Introduction/Business Problem section in your final report. So I recommend that you push the report (having your Introduction/Business Problem section only for now) to your Github repository and submit a link to it.

3. Describe the data that you will be using to solve the problem or execute your idea. Remember that you will need to use the Foursquare location data to solve the problem or execute your idea. You can absolutely use other datasets in combination with the Foursquare location data. So make sure that you provide adequate explanation and discussion, with examples, of the data that you will be using, even if it is only Foursquare location data.

This submission will eventually become your Data section in your final report. So I recommend that you push the report (having your Data section) to your Github repository and submit a link to it.

Is there any room for a new Coffee Shop in the island of Manhattan (New York)?

1. Introduction/Business Problem

Without a shadow of a doubt, we all have heard -at least once in our lifetime- that “New York is the City that never sleeps” and we all can bet, for sure, that Coffee has played a mayor role in keeping the city awake. Although there seems to be a countless number of Coffee shops spread throughout the City of New York, the renewed interest of the younger generations and the Hipsters¹ on the taste and the correct preparation of the stimulant drink, opens the question of whether it would be a good idea or not to open a new Coffee Shop in any of the neighborhoods² of the island of Manhattan, especially after taking into consideration that some newspapers report that in some Coffee Shops like Eleven Madison Park, people are willing to pay up to US\$24 for a simple cup of the drink.

Nowadays, business decisions are taken not only based on the mere instinct or heart-beats of the people interested in obtaining a good profit, but on the increasingly amount of data that is available from organizations like Foursquare, where customers publish their opinions and ratings about the different venues they have the opportunity to visit, and from public offices or institutes that collect the demographic information from the people of New York.

In the following Peer-graded assignment, the data collected of the different Coffee Shops that are in the Borough of Manhattan, New York, is going to be complemented with some demographics and some income data from the city of New York to answer a simple business question: “Is there any room for a new Coffee Shop in the island of Manhattan?” And if so, in which neighborhood should this new Coffee Shop be located?

2. Data section

The provided datasets are spread across two tables, that are relevant to the chosen question/topic. The two datasets are the following:

Demographics

¹ The hipster subculture is comprised of 20-to-30-year old, highly-educated and socio-politically informed millennials. They are middle to upper class, educated, nonconformists who typically live in urban areas.

² According to Wikipedia, the neighborhoods of the island of Manhattan are the following: Chinatown, Greenwich Village, Little Italy, Lower East Side, NoHo, SoHo, West Village, Alphabet City, Chinatown, East Village, Lower East Side, Two Bridges, Chelsea, Clinton, Hell's Kitchen, Hudson Yards, Midtown, Gramercy Park, Kips Bay, Rose Hill, Murray Hill, Peter Cooper Village, Stuyvesant Town, Sutton Place, Tudor City, Turtle Bay, Waterside Plaza, Lincoln Square, Manhattan Valley, Upper West Side, Lenox Hill, Roosevelt Island, Upper East Side, Yorkville, Hamilton Heights, Manhattanville, Morningside Heights, Harlem, Polo Grounds, East Harlem, Randall's Island, Spanish Harlem, Wards Island, Inwood and Washington Heights.

Demographic data (population, age, income, etc.) organized alphabetically by Neighborhood Tabulation Area (NTA), with 188 rows & 33 columns (See detail).

demographics

Demographic data (population, age, income, etc.) organized alphabetically by NTA.

188 rows & 33 columns. Size: ~0.1MB.

Field	Type	Description
nta_name	STRING	Name of NTA
borough	STRING	Borough that NTA is located in
nta_code	INTEGER	Identifying code for NTA
population	INTEGER	Total number of people in NTA
age brackets (14 total)	INTEGER	Number of people in given age bracket
median_age	FLOAT	Median age of people in NTA
people_per_acre	INTEGER	Number of people per acre
households	INTEGER	Total number of households in NTA
income brackets (10 total)	INTEGER	Number of households in given income bracket
median_income	INTEGER	Median household income
mean_income	INTEGER	Mean household income

New York Dataset

The new_york_dataset has a total of 5 boroughs and 306 neighborhoods and luckily, exists for free on the web. Here is the link to the dataset: https://geo.nyu.edu/catalog/nyu_2451_34572

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	Arturo's	40.874412	-73.910271	Pizza Place
1	Marble Hill	40.876551	-73.91066	Bikram Yoga	40.876844	-73.906204	Yoga Studio
2	Marble Hill	40.876551	-73.91066	Tibbett Diner	40.880404	-73.908937	Diner
3	Marble Hill	40.876551	-73.91066	Dunkin'	40.877136	-73.906666	Donut Shop
4	Marble Hill	40.876551	-73.91066	Starbucks	40.877531	-73.905582	Coffee Shop