The Battle of Neighborhoods - Choosing location to open a small business

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1. Introduction

In this project, we are interested in opening a small business in New York City. To identify a viable business the location plays an very important role. Our aim is to identify what kind of business will be successful in which location. For which we will first identify the most visited business location based on the check-ins. Then we will try to find the neighborhoods that are lacking the selected type of business, which will be our potentital oppurtunity to choose the business and location.

2. Target Audience

The target audience for the project will be anyone open to the idea of starting a small business as an investment oppurtunity, without a plan of what business to setup and the potential location for the same.

3. Data Section

The data is used from the following link https://sites.google.com/site/yangdingqi/home/foursquare-dataset. It contains 227,428 check-ins in New York City. The data contains two files in tsv format. Each file contains eight columns which are,

1. User ID (anonymised)
2. Venue ID (FourSquare)
3. Venue Category ID (FourSquare)
4. Venue Catergory Name (FourSquare)
5. Latitude
6. Longitude
7. Time Zone offset in minutes (The offset in minutes between when this check-in occurred and the same time in UTC)
8. UTC time

4. Application

We will find the most visited type of shop (commercial) according to the number of check-ins given in the data, then we will try to find neighborhoods that has none of this type of shop.

Examples are for 2000 venues, and the red dot is the center neighborhood which has the most number of Bars between selected coordinates. We did find two neighborhoods that are closest to it having none Bars within 4 kilometers.

	VenueID	CategoryName	Visitor Count	Latitude	Longitude
0	49bbd6c0f964a520f4531fe3	Arts & Crafts Store	7	40.719810375488535	-74.00258103213994
1	4a43c0aef964a520c6a61fe3	Bridge	37	40.60679958140643	-74.04416981025437
2	4c5cc7b485a1e21e00d35711	Home (private)	1	40.716161684843215	-73.88307005845945
3	4bc7086715a7ef3bef9878da	Medical Center	1	40.7451638	-73.982518775
4	4cf2c5321d18a143951b5cec	Food Truck	4	40.74010382743943	-73.98965835571289

[('Train Station', 943), ('Park', 778), ('Airport', 769), ('Bar', 756), ('Subway', 587), ('Coffee Shop', 447), ('Gym / Fitness Center', 447), ('Food & Drink Shop', 426), ('Neighborhood', 362), ('Plaza', 342), ('Stadium', 339), ('Bridge', 272), ('Office', 264), ('Department Store', 240), ('Mall', 238), ('Burger Joint', 206), ('American Restaurant', 202), ('Road', 201), ('Bus Stati