Analysis of restaurant types for New Work

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1. Introduction

1.1 Background

New York is one of the most famous cities in the world. There are many people that are working on daily basis and thousands of visitors each day. So the restaurant business is very common and profitable. A very high percentage of restaurant investors are cooperating with real estate agents in order to find the perfect spot for their investment.

1.2 Problem

The problem is to create a smart map of New York that the real estate agent could distinguish the areas of interest according to the requirements of the client.

2. Data acquisition and cleaning

2.1 Data sources

In order to achieve the requirement we will use Foursquare API. We will perform queries for each restaurant type, clean and bind the data to one data set.

2.2 Data cleaning

We performed different queries for each category:
- 'pizza' → For Pizza restaurants
- 'Chinese restaurants' → For Chinese Food
- 'Burger' → For burger related restaurants
- 'kebab' → For kebab related restaurants

In order to get the data for a great area, we placed the value of 10000 radius on the query.

The result of the Foursquare API was a json file that we have to convert to a data frame in order to further clean and use the data.

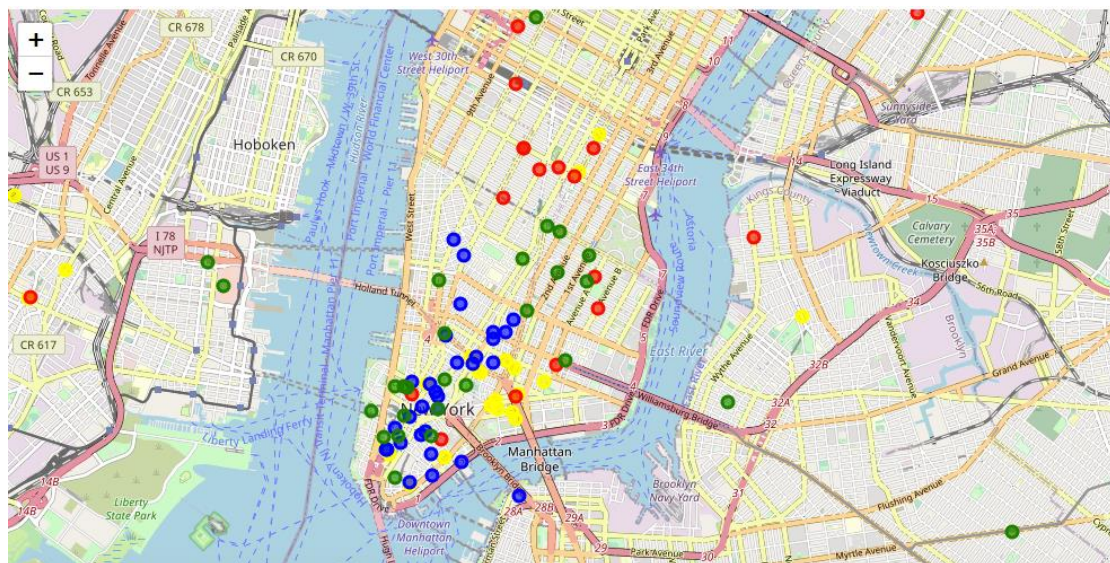As a next step we used *json_normalize* pandas command in order to transform the json files to data frames.

Then using the pandas *concat* command we will merge all the data frames.

	name	categories	address	cc	city	country	crossStreet	distance	formattedAddress	labeledLatLngs	lat	lng	postalCode	state
0	Horus Café & Kebab House	Hookah Bar	93 Avenue B	US	New York	United States	at E 6th St	2438	[93 Avenue B (at E 6th St), New York, NY 10009...	[{'label': 'display', 'lat': 40.72439403601305...	40.724394	-73.981559	10009	NY
1	The Country Kebab	Restaurant	76 Fulton St	US	New York	United States	Gold St.	394	[76 Fulton St (Gold St.), New York, NY 10038, ...	[{'label': 'display', 'lat': 40.709212, 'lng':...	40.709212	-74.005390	10038	NY
2	Ole Kebab Express	Middle Eastern Restaurant	49 W 14th St	US	New York	United States	6th Ave	2837	[49 W 14th St (6th Ave), New York, NY 10011, U...	[{'label': 'display', 'lat': 40.737066, 'lng':...	40.737066	-73.996034	10011	NY
3	Xin Jiang Prosperity Kebab	Food Truck	Division St	US	New York	United States	at Forsythe	1014	[Division St (at Forsythe), New York, NY, Unit...	[{'label': 'display', 'lat': 40.7142284, 'lng'...	40.714228	-73.994156	NaN	NY 5
4	Kotti Berliner Döner Kebab @ Essex	Food Stand	NaN	US	New York	United States	NaN	1636	[New York, NY 10002, United States]	[{'label': 'display', 'lat': 40.717886, 'lng':...	40.717886	-73.987856	10002	NY

Now we are ready to depict the spots to the map of New York. We used Folium map library in order to depict the information.

The different types of restaurants are distinguished with different colors in order to help the user understand better the data.