Where is suitable to open an Coffee Bar in Manhattan, N.Y.?

- Final Report

Introduction

➢ Grace moved to New York city three months ago, and she lives in Manhattan district now.

➢ Grace is looking for a suitable site to open a Coffee Bar in Manhanttan

➢ where would we recommend that she open the Coffee Bar?

Data

➢ To give a suitable recommendation to Grace, my approach is to find the characteristics of each neighborhood in Manhattan, N.Y., then cluster the neighborhoods to some typical clusters. And tell Grace which cluster and which neighborhoods are good choice to open a Coffee Bar.

➢ For this analysis, I need the data of neighborhoods in Manhattan, neighborhood name, it's equivalent latitude and longitude values, we can get these data from https://geo.nyu.edu/catalog/nyu_2451_34572.

➢ Get the related common venue categories data in each neighborhood from Foursquare

Methodology

➢ I use the Foursquare API to explore neighborhoods in Manhattan, N.Y.

➢ Use the "explore" function to get the most common venue categories in each neighborhood, and then use this feature to group the neighborhoods into clusters.

➢ Use the k-means clustering algorithm to complete this analysis.

➢ Use the Folium library to visualize the neighborhoods in Manhattan, New York City and their emerging clusters.

Result, Discussion and Conclusion

➢ Examine result clusters, I find there are much coffee shops and Bars in their top 3 categories in the cluster 2 and 4. In cluster 4, there are only 4 neighborhoods, but there are 4 Coffee Shops in top 3 categories. In cluster 2, there are 7 neighborhoods, there are 6 Coffee shops in tops 3 categories. So, cluster 2 is better group to open an Coffee Shop than cluster 4.

➢ For Grace, my recommendation is to open an Coffee Shop at China Twon, Uper East Side, Roosevelt Island in the cluster 2.

➢ If I can get more polulation information, the Cluster with be more optimized, and get more value for recommendation.

➢ As the conclusion, I find k-means clustering algorithm + neighborhood information is a method to help people to select the shop site.

Thanks!