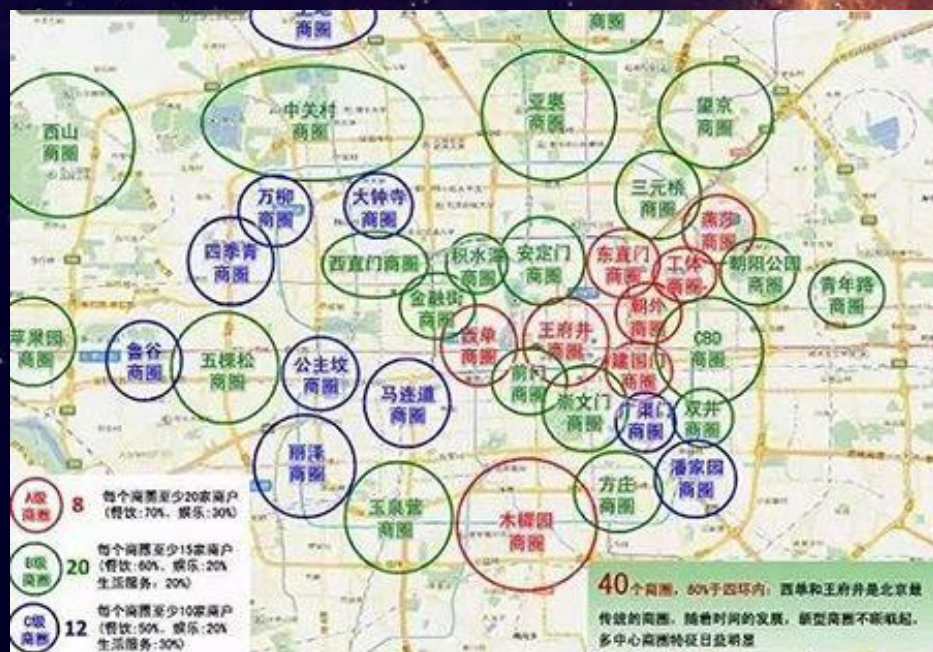# Coursera Capstone

IBM Applied Data Science

Opening a new shopping mall in Beijing

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Introduction

How to select a location in Beijing for real estate developers or overseas investors to build a new shopping mall?

Distribution map of Beijing business district

♥ **For whom**

- commercial real estate developers
-brand retailers

Data

① **Description**

- A list of neighborhoods in Beijing, especially the prominent neighbors (no Ethnic enclaves).
- The latitude and longitude coordinates of these neighborhoods.
- The site data necessary related to the mall.

② **Source**

Wikipedia page: *https://en.wikipedia.org/wiki/Neighborhoods_in_Beijing*

	Neighborhood	Latitude	Longitude
0	Qianmen	39.89290	116.40607
1	Tiananmen	39.90444	116.39139
2	Dianmen	39.93943	116.39301
3	Chongwenmen	39.89972	116.41222
4	Xuanwumen	39.89833	116.36806
5	Fuchengmen	39.92295	116.34780
6	Xizhimen	39.93889	116.35028
7	Deshengmen	39.94126	116.37929
8	Andingmen	39.94382	116.39952
9	Sanlitun	39.93609	116.44375
10	Dongzhimen	39.93596	116.43027
11	Chaoyangmen	39.91460	116.41671
12	Yongdingmen	39.87229	116.10337
13	Zuoanmen	39.86929	116.43320
14	Youanmen	39.86554	116.35758
15	Guangqumen	39.89199	116.43661
16	Guanganmen	39.88806	116.34194
17	Huashi	39.90750	116.39723
18	Xibianmen	39.89778	116.35028
19	Hepingmen	39.89996	116.37435
20	Fuxingmen	39.90556	116.35111
21	Jianguomen	39.91460	116.41671
22	Gongzhufen	39.90750	116.39723
23	Fangzhuang	40.47831	116.04172
24	Guomao	39.90750	116.39723
25	Hepingli	39.95276	116.41093
26	Pinganli	39.90750	116.39723
27	Beixinqiao	39.73360	116.73168
28	Jiaodaokou	39.93987	116.40677
29	Kuanjie	39.90750	116.39723
30	Wangjing	39.99330	116.47284
31	Wangfujing	40.48498	116.11016
32	Dengshikou	39.90750	116.39723
33	Wudaokou	39.99257	116.33208
34	Xidan	39.90750	116.39723
35	Dongdan	39.91460	116.41671
36	Zhongguancun	39.98111	116.30889
37	Panjiayuan	39.88392	116.47576
38	Beijing CBD	39.90750	116.39723
39	Yayuncun	40.01388	116.39644
40	Shifoying	39.90750	116.39723

Methodology

Get the data
A

-get the community list of Beijing
-do web fetching using a Python request and
 beautifulSoup package
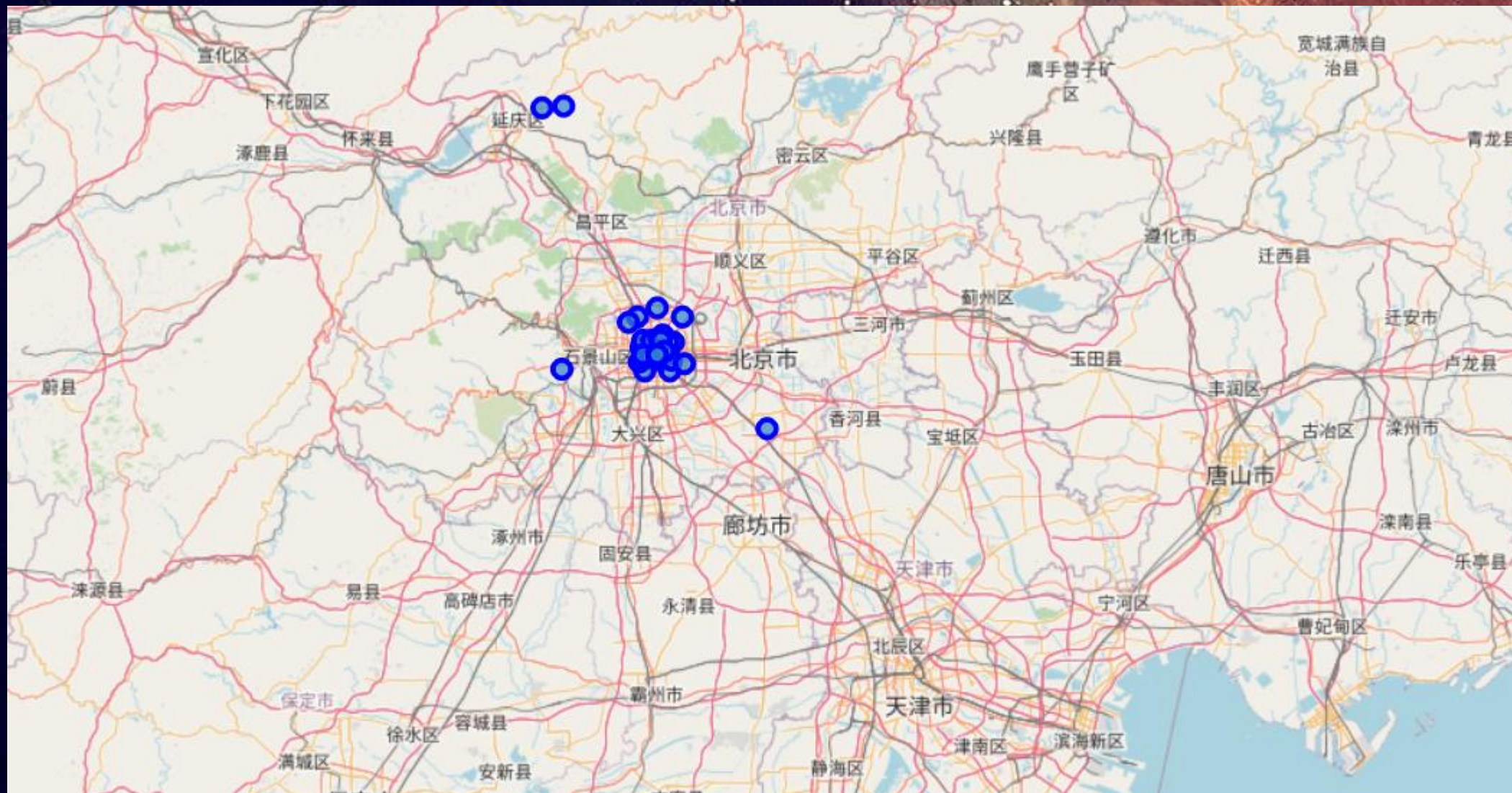-use the geocoder package to get the geographic

Use foursquare API
C

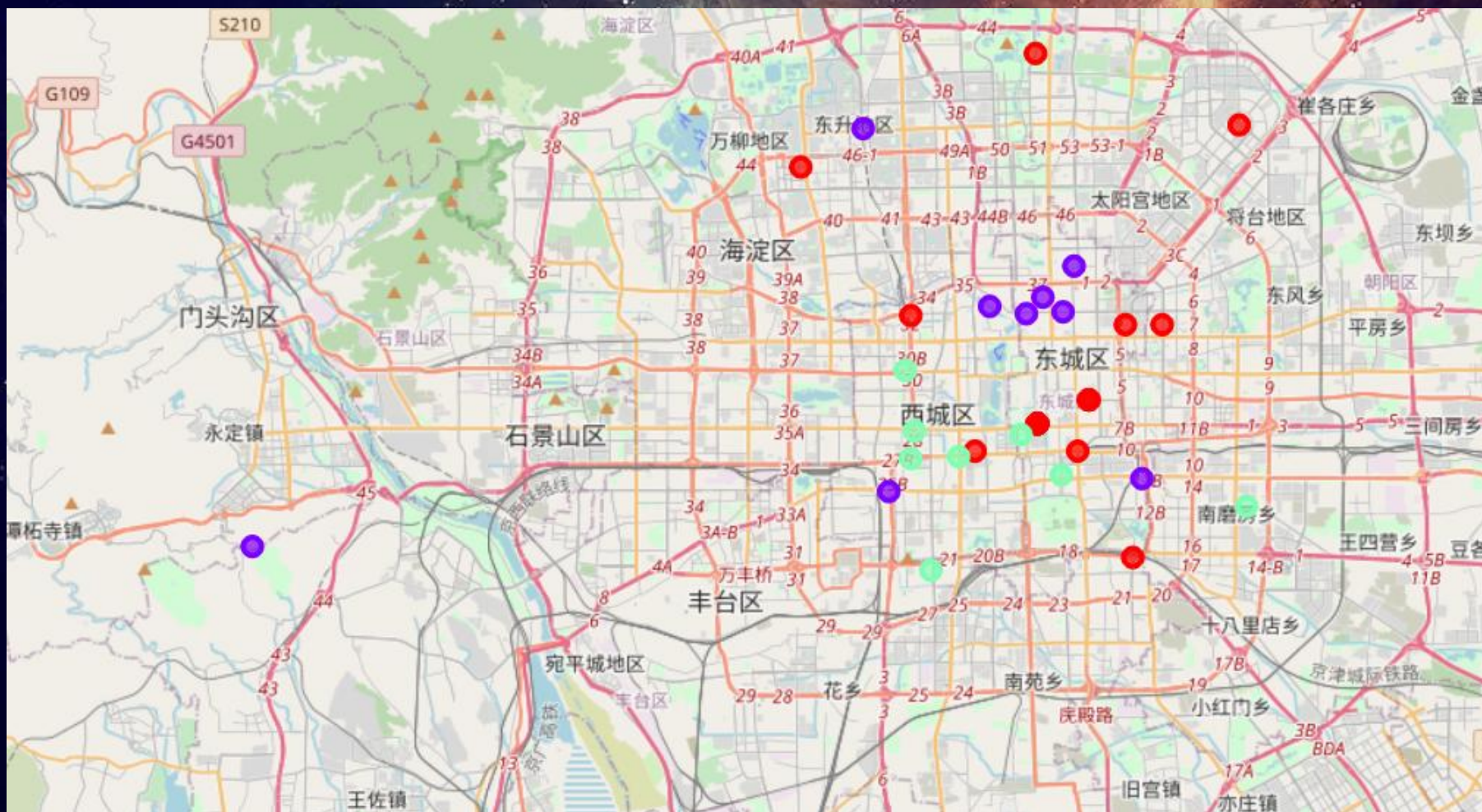-Explore venues

-Visualize the data using the Folium package

B

Use K-Mean cluster

-divide the neighbourhoods into three clusters

-Discussion and conclusion

Map_venue

Result

Red：Cluster 1
Purple：Cluster 2
Green：Cluster 3

MAP CLUSTER

Discussion

💙 Most of the shopping centers are concentrated in the central area of Beijing, with the largest number of shopping centers in Cluster 3 and the moderate number of shopping centers in Cluster 1. Cluster 2 hardly has shopping malls.

💙 Cluster2 has a huge opportunity and high potential for the construction of new shopping malls, as there is little competition for existing shopping centers.

💙 The malls in Cluster 3 may face intense competition due to the high concentration and oversupply of shopping malls, so the developer need to avoid opening a new shopping mall there.

Conclusion

The area adjacent to Cluster 2 is the preferred location for new shopping centers.

Reference

[1] Chu Qian, From "Wolf" to "cat" -- Ten years of Changes in Beijing shopping Malls [J]. China Market, 2008(4):36-36.

[2] Ninghui Chen, List of Shopping Centers to be opened in Beijing 2020: Dongba Wanda Plaza, Joy in the Spring Breeze… Lianshang Retail research Center. http://www.linkshop.com.cn/web/archives/2020/444113.shtml

[3] Wikipedia page: https://en.wikipedia.org/wiki/Neighborhoods_in_Beijing

Thanks a lot