

An aerial photograph of Hong Kong's skyline at sunset. The city is densely packed with skyscrapers and residential buildings. The Victoria Harbour is visible in the center, with the water reflecting the warm colors of the setting sun. The sky is filled with large, dramatic clouds, and the overall atmosphere is serene and majestic. The text "ANALYZINE THE MAJOR DISTRICTS OF HONG KONG" is overlaid in the center in a white, sans-serif font.

ANALYZINE THE MAJOR DISTRICTS OF HONG KONG

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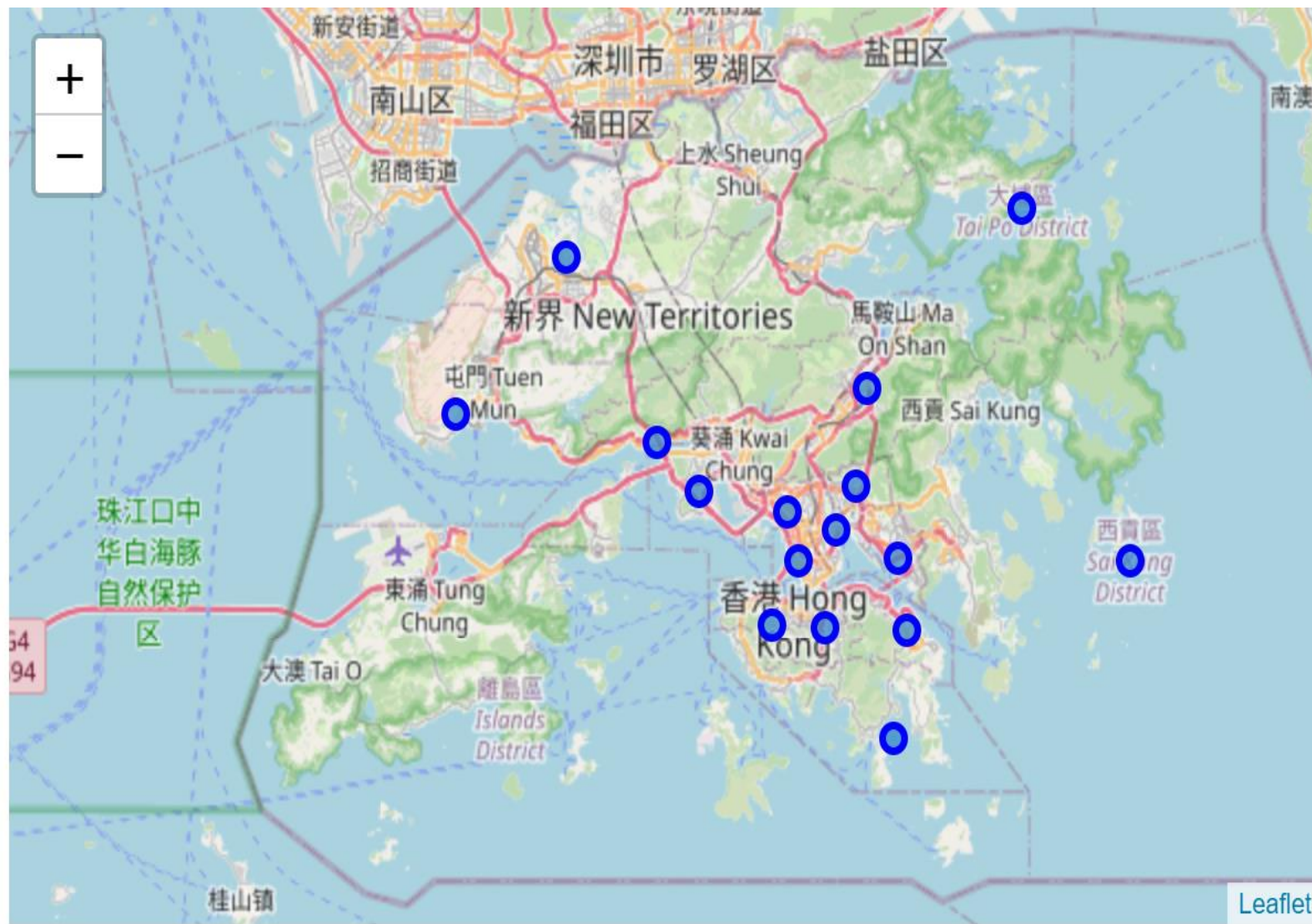
VISITING HONG KONG

- Hong Kong has a population of roughly 7.4 million people and ranks as one of highest densely populated areas in world
- 40 million tourists entered Hong Kong last year 2019
- Valuable to assist tourists to determine which district they should stay in based on their needs



VISUALIZING HONG KONG DISTRICTS

- Folium library was used to display 17 districts of Hong Kong



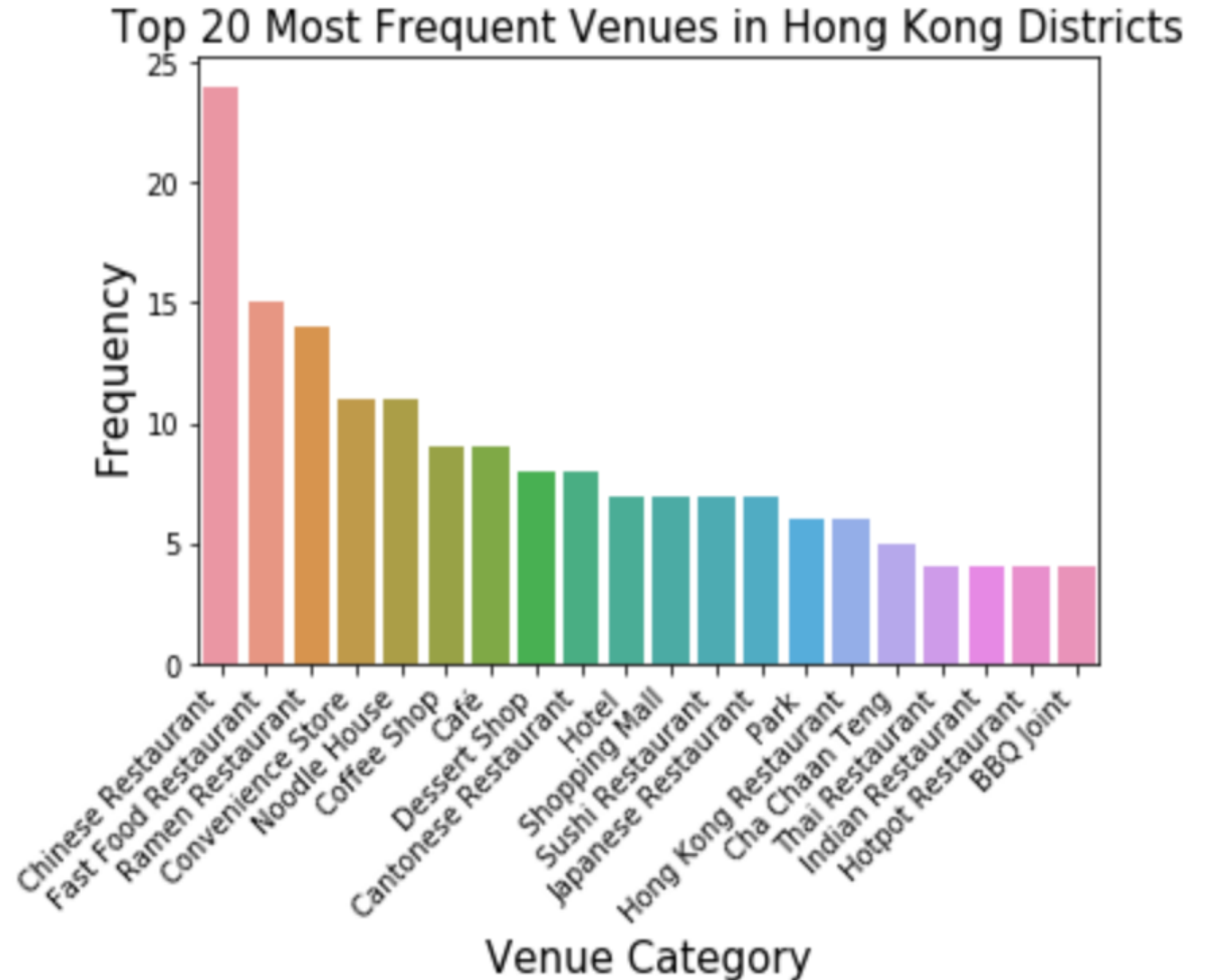
MAP OF HONG KONG

- Hong Kong District List was scraped from Wikipedia
- A total of 17 rows was collected correlating to the 17 districts
- Unnecessary columns were dropped
- Using Geopy client, Latitude and Longitude coordinates were obtained and added to list

0	Central and Western	中西區	244,600	12.44	19,983.92	Hong Kong Island
1	Eastern	東區	574,500	18.56	31,217.67	Hong Kong Island
2	Southern	南區	269,200	38.85	6,962.68	Hong Kong Island
3	Wan Chai	灣仔區	150,900	9.83	15,300.10	Hong Kong Island
4	Sham Shui Po	深水埗區	390,600	9.35	41,529.41	Kowloon
5	Kowloon City	九龍城區	405,400	10.02	40,194.70	Kowloon
6	Kwun Tong	觀塘區	641,100	11.27	56,779.05	Kowloon
7	Wong Tai Sin	黃大仙區	426,200	9.30	45,645.16	Kowloon
8	Yau Tsim Mong	油尖旺區	318,100	6.99	44,864.09	Kowloon
9	Islands	離島區	146,900	175.12	825.14	New Territories
10	Kwai Tsing	葵青區	507,100	23.34	21,503.86	New Territories
11	North	北區	310,800	136.61	2,220.19	New Territories
12	Sai Kung	西貢區	448,600	129.65	3,460.08	New Territories
13	Sha Tin	沙田區	648,200	68.71	9,433.85	New Territories
14	Tai Po	大埔區	307,100	136.15	2,220.35	New Territories
15	Tsuen Wan	荃灣區	303,600	61.71	4,887.38	New Territories
16	Tuen Mun	屯門區	495,900	82.89	5,889.38	New Territories

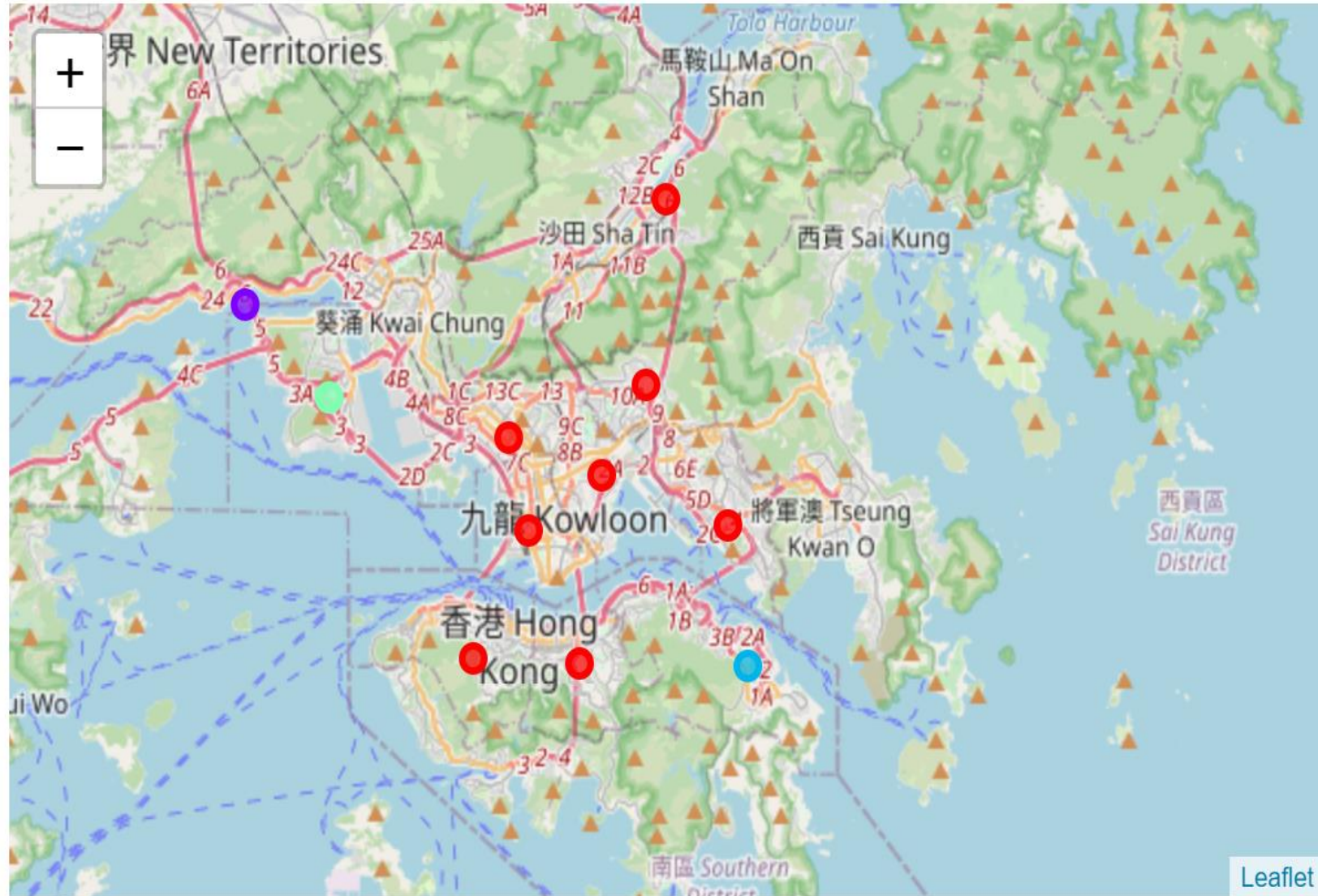
FOURSQUARE API

- Using the Foursquare API, we get the top 100 venues located within a 500-metre radius of the Hong Kong districts
- We display the top 20 most frequent venues among the districts



CLUSTERING THE DISTRICTS

- Using pandas groupby function, we calculate frequency of each venue and determine most common venues for each district
- We use k-means clustering to separate the districts based on venues located around them and use Folium library to display results



RESULTS

- Top venue category among districts are Chinese restaurants
- Tourists should travel to Central and Western district if they want to experience scenic lookouts
- The Islands, Kowloon City, Kwai Tsing, and Wan Chai districts most known for number of restaurants
- Tuen Mun should be visited if they want to experience a beachy scene
- K-means clustering produced 4 different clusters with 8 districts having similar venues among them

CONCLUSION

- K-means clustering may produce different results depending where we set out original cluster points
- Analysis is only based on occurrence of districts, price and reviews have not been taken into consideration
- Accuracy of venue occurrence can be improved based on radius that we set
- Analyzing districts may be too broad, analyzing specific neighborhoods may be more useful for tourists