Finding an appropriate place for a Japanese center in the USA

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1.Introduction

1.1 Background

Nowadays, the Japanese government has identified the culture industry as one of five potential areas of growth and established a new Creative Industries Promotion Office to promote cultural and creative industries. This office has introduced Japanese culture such as Japanese pop culture, animation,arts and Japanese foods.These Japanese cultural creative industries are called “Cool Japan”.Through this promotion, Japanese shops or stores have been founded all over the world. For example, there is a “Japan House” which is the center to introduce Japanese arts, pop culture and traditional Japanese foods. This Japan House is located in Los Angeles, Sao Paulo and London.

1.2 Problem

In spite of the promotion, Japan has continued experiencing losses and mismanaged investments for “cool Japan”. For example, in October 2016, Japanese department store operator Isetan launched the Japan Store, a Japanese-style high-end retail outlet, in Kuala Lumpur. However, the store has continued to struggle against local competitors, with its pricing leading to disappointing sales and increasing deficits(here).

1.3 Question

'To promote the project of "Cool Japan" and introduce Japanese culture or food, where can we establish an appropriate place for Japanese center, especially in the USA?' This is the question of this project.The USA has large population and a great number of cities. It would be an ideal country to promote “Cool Japan” to many people.
An ideal location has to be the place where the people who are interested in cultural things gather such as the a place near parks or theaters ,as the Japanese center is cultural. In addition, places where restaurants, cafes and food malls are located are preferred , because Japanese foods will be also introduced in the Japanese center.

2. Data acquisition and cleaning

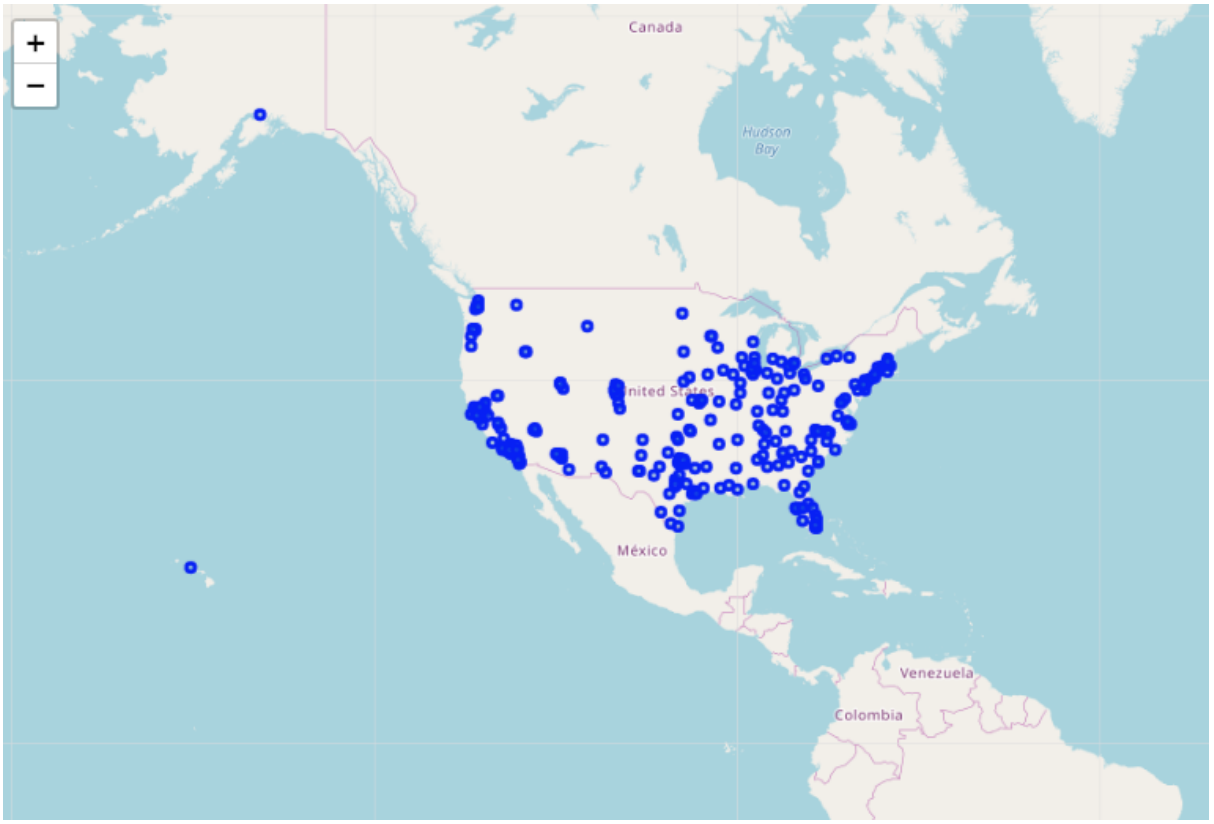
2.1 Data Sources

A List of all the cities in United States with population density and coordinates from Wikipedia was used in order to obtain each city in the USA and its population. Google Maps API geocoding was also used to generate centers of candidate areas algorithmically with approximate addresses of of centers of those areas. In addition, the number of all venues in each city and types such as restaurants or shops in every neighbourhood was obtained by using Foursquare API.

2.2 Data Cleaning

The data of all cities in the USA with population density and coordinates was extracted into a dataframe and we found the radius of each city to use in the preprocessing of the column Sq.Area (changing its data type to float) and find its square root. In addition, unnecessary

columns were removed and the coordinates were split into latitudes and longitudes for each city so we could search the location later. Finally, the cities in the USA were plotted and checked.



After that, the system of Foursquare API working was added into the dataframe, which was previously extracted using the necessary columns and then, we created the new columns which shows venues and their categories.

A part of the dataframe

	City	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	New York[d]	40.6635	-73.9387	Super Power	40.673952	-73.950184	Tiki Bar
1	New York[d]	40.6635	-73.9387	Brooklyn Botanic Garden	40.667622	-73.963191	Botanical Garden
2	New York[d]	40.6635	-73.9387	Covenhoven	40.675143	-73.960203	Beer Bar
3	New York[d]	40.6635	-73.9387	Brooklyn Museum	40.671521	-73.963677	Art Museum
4	New York[d]	40.6635	-73.9387	Kings Theatre	40.646110	-73.957175	Theater

3. Analysis

3.1 Assignment of weights

As I mentioned earlier, the Japanese center needs to be put in a place where people gather and it has to be near parks, theateres, cafes or restaurants because of the nature of the Japanese center. Therefore, I assigned weights to some important categories for this project: 'Movie Theater'(4),'Park'(3),'Restaurant'(5),'Concert Hall'(2.5),'Café'(4),'Coffee

Shop'(3.5),'Food Court'(4),'Nightclub'(4),'Toy / Game Store'(3),'Theme Park Ride / Attraction'(4),'Pub'(3), before the indexes of 0 weight were removed.

3.2 Normalizing and finding out the appropriate city

After preprocessing the population density in to a Km2 column, I normalized the dataframe

A part of the dataframe

	City	Population density in Km2	weights
0	New York[d]	1.000000	0.200000
1	Los Angeles	0.295260	0.480000
2	Chicago	0.417119	0.300000
3	Houston[3]	0.122135	0.266667
4	Phoenix	0.104188	0.400000

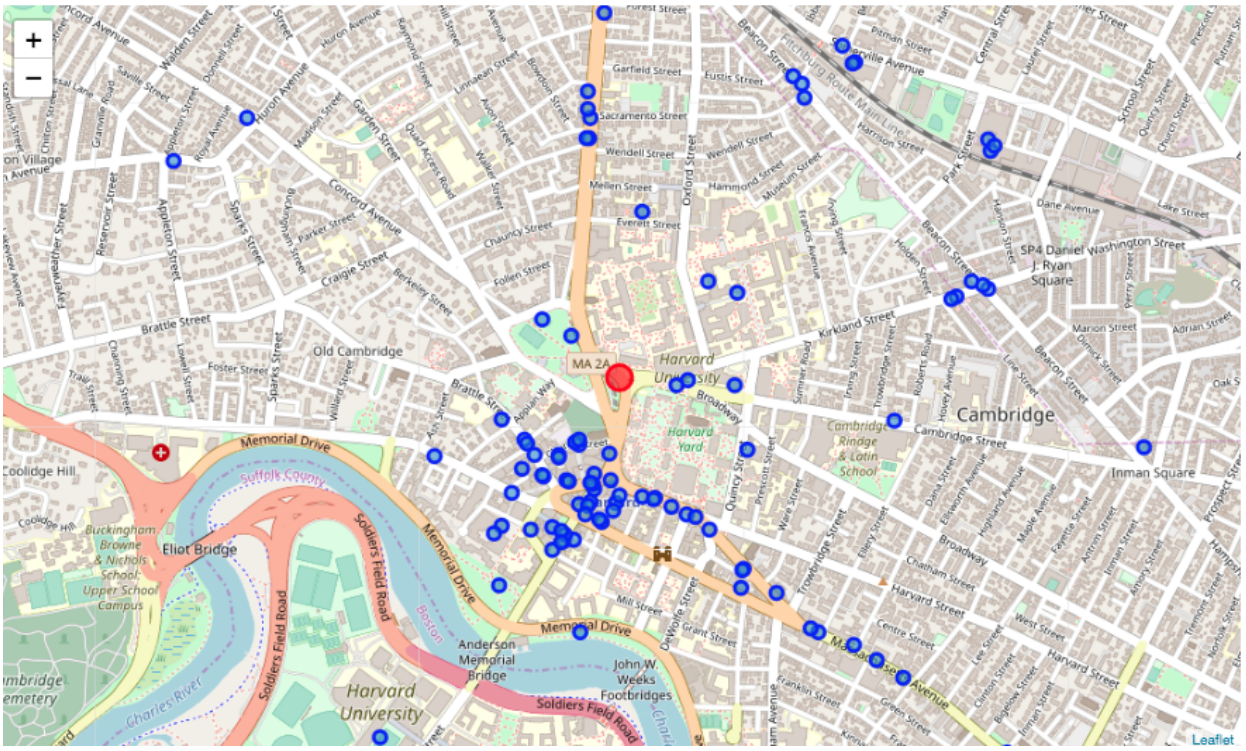
The population density is also necessary, because the Japanese center needs to be in a place where people gather. Therefore, I calculated the sum of normalized for both columns of 'Population density in km2' and 'weights' to determine the city of the maximum sum. After this process, I concluded the most suitable locality city is Cambridge, Massachusetts.

3.3 Deep assignment of weights

I checked the location of Cambridge, Massachusetts, which is 42.376(latitude) / -71.1187(longitude). Next, I identified all the venues of Massachusetts using Foursquare API within our considered radius and limits and then, in order to analyze Cambridge in depth, I assigned more weights with more categories. Then, I checked the location by plotting all the venues that we had got from the Foursquare API, before I calculated new weights for our dataframe.

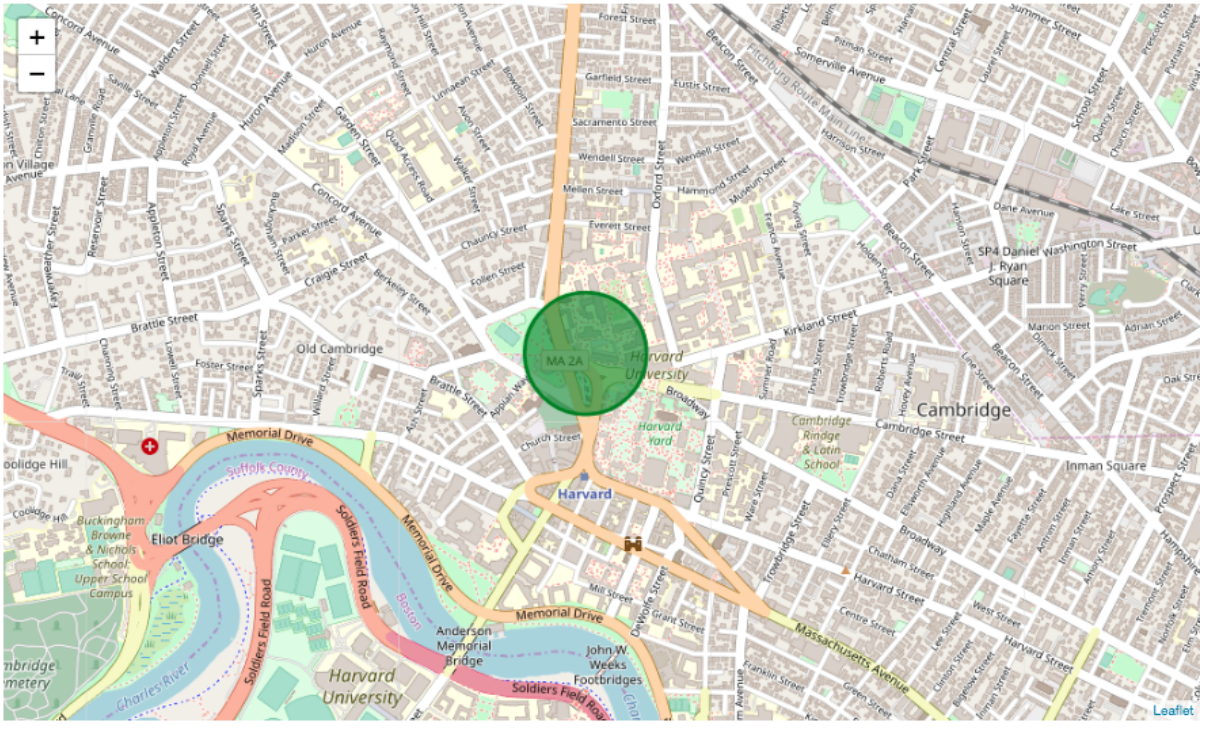
A part of dataframe

	City	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category	weights
0	Massachusetts	38.3539	-121.9728	Harvard Square	42.373458	-71.119004	Plaza	2
1	Massachusetts	38.3539	-121.9728	Felipe's Mexican Taqueria	42.373431	-71.120515	Mexican Restaurant	2
2	Massachusetts	38.3539	-121.9728	Sanders Theatre	42.375835	-71.114786	Theater	3
3	Massachusetts	38.3539	-121.9728	Club Passim	42.374330	-71.120083	Music Venue	0
4	Massachusetts	38.3539	-121.9728	The Sinclair	42.374094	-71.120757	Rock Club	0



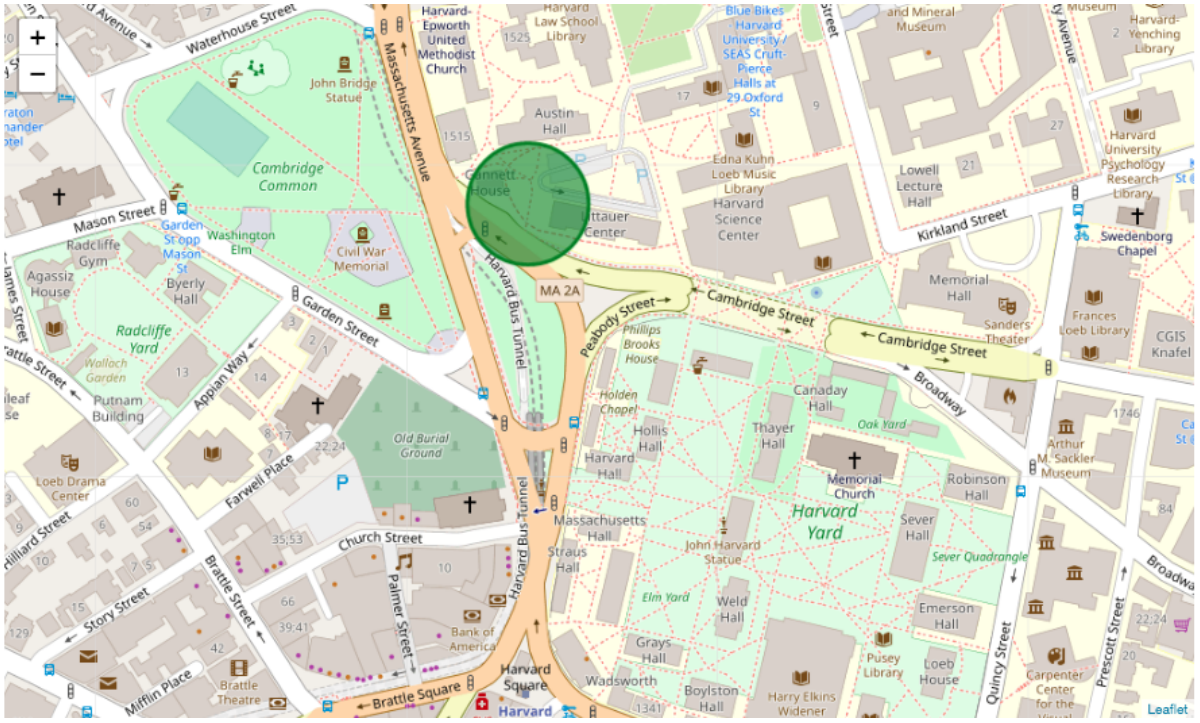
3.4 K means algorithm

Finally, I used a K Means algorithm to cluster the venues and calculated the weights for each cluster to decide which cluster would be the best area to locate the Japanese Center.



4. Conclusion

I found that the appropriate place is along Cambridge Street in Cambridge, Massachusetts. We can find that this area is surrounded by university facilities. On the south side of this location, many restaurants and cafes are located. There are also huge parks in front of the venue and around this location. Sandra Theater is found on the west side of this location. As this is a cultural place where many people gather, it is considered that this satisfies our requirements.



5. Further enhancements and drawbacks in continuing this approach :

This project can be enhanced by considering many more attributes to define the weights and analysis and also by extending the limit and radius of the search. As the API limit in the free trial of Foursquare API was used, the research was regulated within a small radius.