

Searching the Optimal Location to Open a Coffee Shop in the Ho Chi Minh City



CAFE

Outline

1. Introduction
2. Data Description
3. Methodology
4. Data Analysis
5. Conclusion



1. Introduction



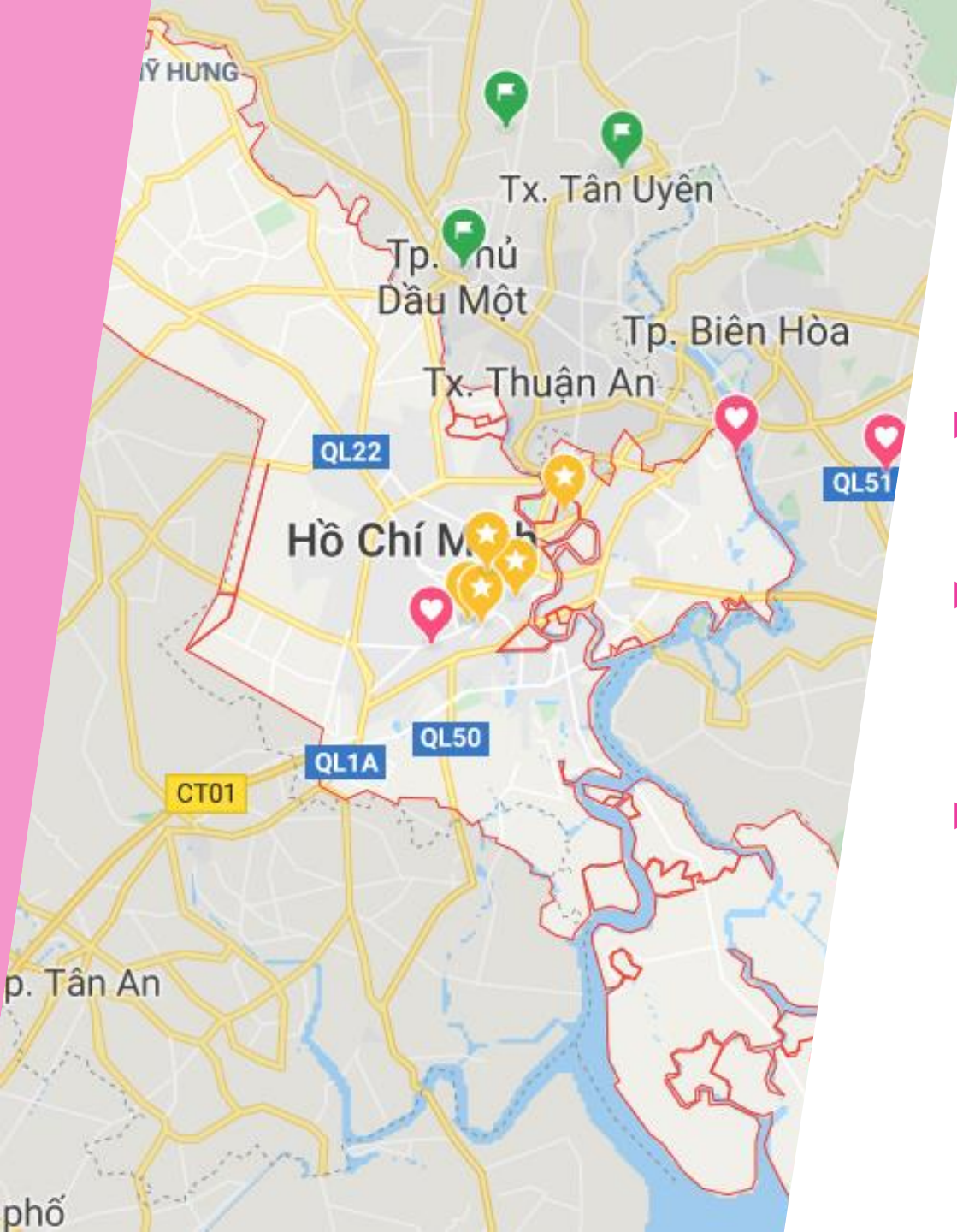
Searching an optimal location for a coffee shop.



Appropriate locations are where the area has few cafes.



Targeted to stakeholders interested in opening a coffee shop in the center of Ho Chi Minh City.



1. Introduction

- ▶ Segmenting and clustering neighborhoods in Ho Chi Minh City.
- ▶ Central location is located between Tan Son Nhat International Airport and the city center (District 1).
- ▶ Using the Foursquare API to explore neighborhoods in the City

1. Introduction

- ▶ Finding reasonable areas to open a coffee shop: detect locations that are not already crowded with coffee shops.
- ▶ Analyze the data to find locations for opening the coffee shop in the most economical way.



2. Data Description

Based on the definition of the above problem (in intruction), the following requirement data:

- Number of existing coffee shops in the area
- Number of and distance of coffee shops each other in the area
- A distance of the area from the central location (between Tan Son Nhat International Airport and the city center).

=> Creating a grid of cells covering our area of interest which is approx. The radius of 12 kilometers centered around the central location.

2. Data Description

Following data sources will be needed to extract/generate the required information:

- ▶ Centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained.
- ▶ Using Google Maps API reverse geocoding number of the coffee shops and their type and location in every area will be obtained using Foursquare API.
- ▶ Coordinate of the central location will be obtained using Google Maps API geocoding.

3. Methodology



The method of implementation consists of three stages as follows:



Stage #1: Collecting the required data.



Stage #2: Exploratory analysis.



Stage #3: Definiting optimal location.

3. Methodology

Stage #1: Collecting the required data: location and type of every restaurant within 7 km from the central location that we have defined above.

According to Foursquare about categorizations of the coffee shops, searching the location of the coordinates of the cafes in the same mutual area.

3. Methodology

Stage #2: After obtaining the data collected from stage #1, processing to the analysis phase.

The initial analysis process will data exploration, such as the density of the coffee shop across different areas.

Using heatmaps to identify a few promising areas close to center with the low number of coffee shops in general and focus our attention on those areas.

3. Methodology

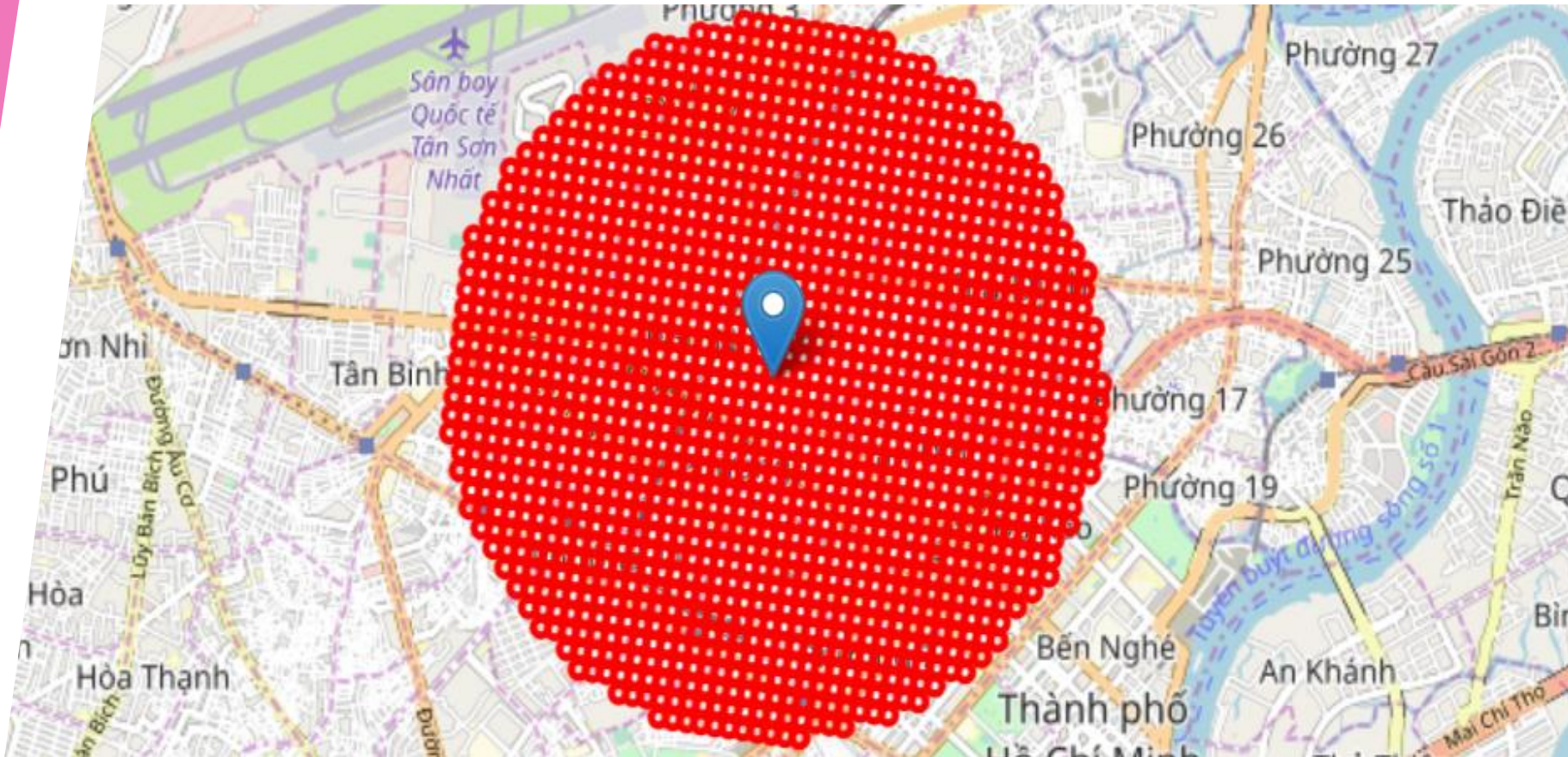
Stage #3: Focus on most promising areas and within those create clusters of locations that meet some basic requirements established in discussion with stakeholders:

- (1) Take into consideration locations with no more than two the coffee shop in a radius of 400 meters, and we want locations without the coffee shops in radius of 600 meters.
- (2) Resenting a map of all such locations.
- (3) Creating clusters of those locations to identify a general area which should be a starting point for final 'street level' exploration and search for optimal venue location by stakeholders.

4. Results of Data Analysis

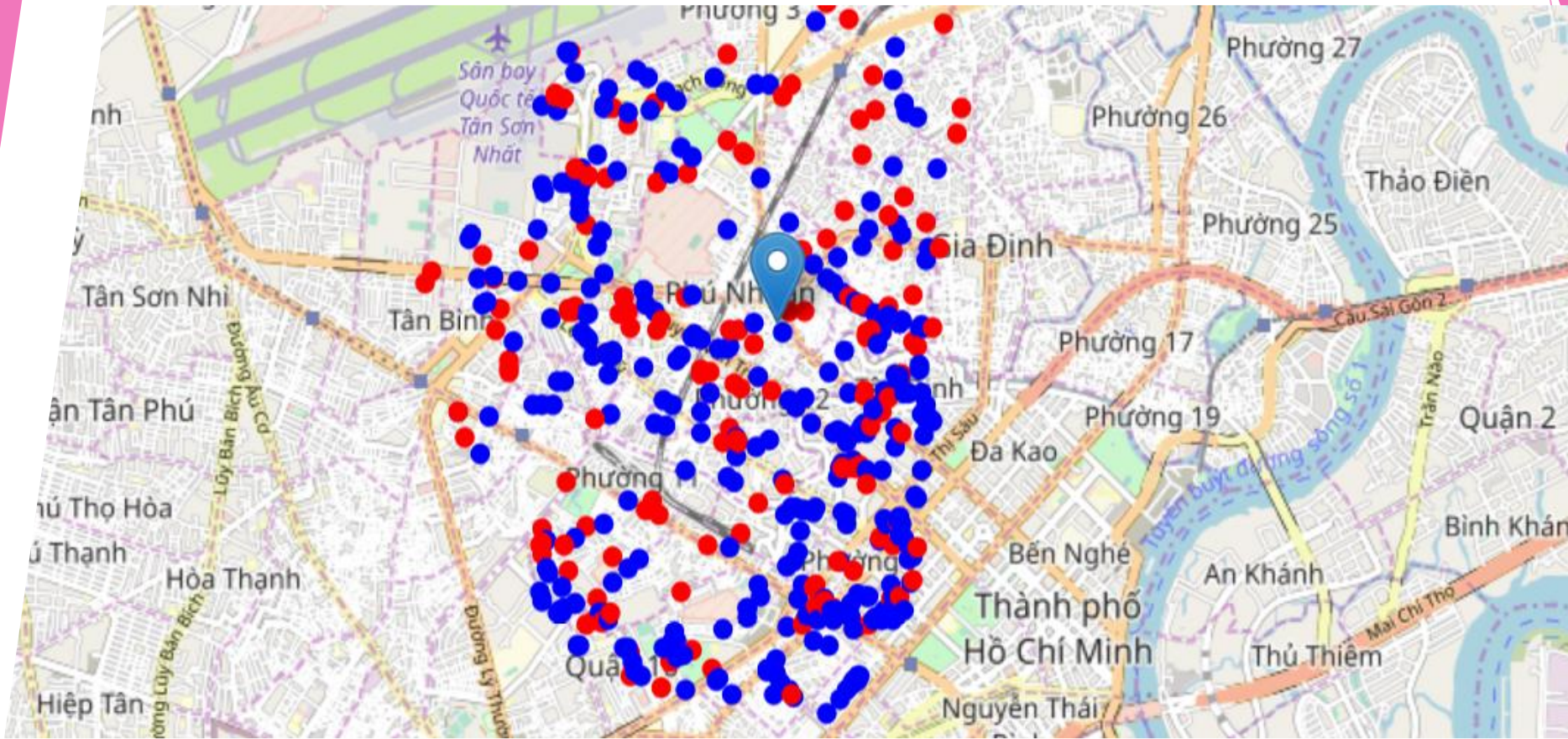
Based on the collected data set and the presented stages in the methodology, the project achieved the following typical results:

The number of drinking shops (food) in every area candidate is 1452 shops. Every area with a radius is 350 m. The average number of drinking shops in every area with the 300m radius is 14.369.



4. Results of Data Analysis

Visualizing the data of city central location and candidate areas centers



4. Results of Data Analysis

Visualizing the central location and the drinking shops

4. Results of Data Analysis

	Address	Latitude	Longitude	X	Y
0	30 Phan Thúc Duyện, Phường 4, Tân Bình, Hồ Chí...	10.806386	106.659513	1.521749e+07	1.088831e+07
1	6/22 Hẻm số 6 Đồ Sơn, Phường 4, Tân Bình, Hồ C...	10.805288	106.659364	1.521809e+07	1.088831e+07
2	27 Sầm Sơn, Phường 4, Tân Bình, Hồ Chí Minh	10.804190	106.659216	1.521869e+07	1.088831e+07
3	36/14 Hẻm 36 Giải Phóng, Phường 4, Tân Bình, H...	10.803092	106.659068	1.521929e+07	1.088831e+07
4	2/15 Hẻm số 2 Đồng Khởi, Phường 4, Tân Bình, H...	10.801995	106.658919	1.521989e+07	1.088831e+07
5	15 Cộng Hòa, Phường 4, Tân Bình, Hồ Chí Minh	10.800897	106.658771	1.522049e+07	1.088831e+07
6	51 Nguyễn Thái Bình, Phường 4, Tân Bình, Hồ Ch...	10.799800	106.658623	1.522109e+07	1.088831e+07
7	308/5 Hoàng Văn Thụ, Phường 4, Tân Bình, Hồ Ch...	10.798702	106.658475	1.522169e+07	1.088831e+07
8	40a, 40B Út Tịch, Phường 4, Tân Bình, Hồ Chí Minh	10.797605	106.658326	1.522229e+07	1.088831e+07
9	437/13- 437/15 Hoàng Văn Thụ, Phường 4, Tân Bì...	10.796508	106.658178	1.522289e+07	1.088831e+07

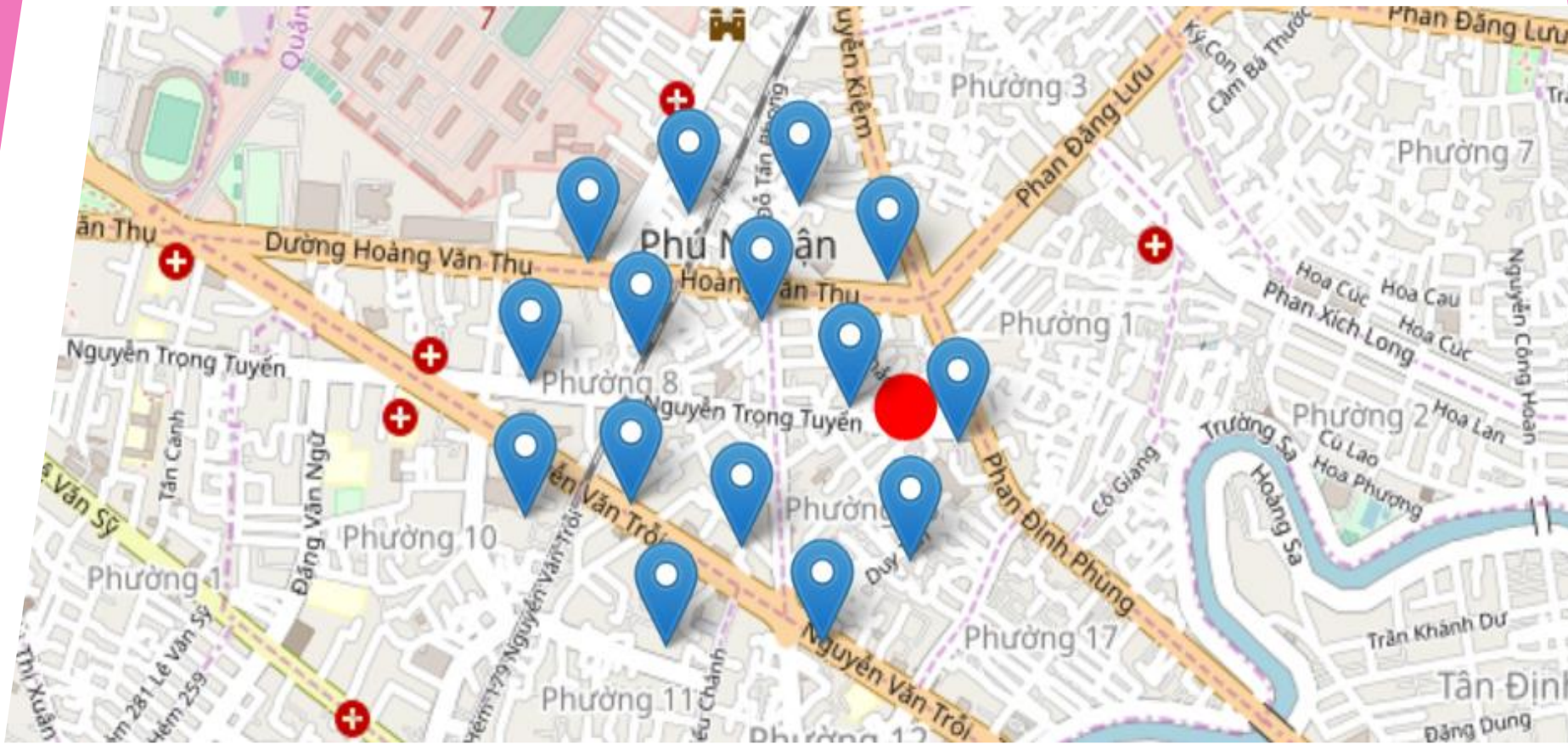
► Using Foursquare API to get info on drinking shop in each candidate area

4. Results of Data Analysis

► Recommended locations to open cafes

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Addresses of centers of areas recommended for further analysis
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223A Trần Huy Liệu, Phường 8, Phú Nhuận, Hồ Chí Minh => 1.5km from my Center
129 Nguyễn Đình Chính, Phường 8, Phú Nhuận, Hồ Chí Minh => 1.9km from my Center
232 Nguyễn Trọng Tuyển, Phường 8, Phú Nhuận, Hồ Chí Minh => 3.5km from my Center
10 Hoàng Văn Thụ, Phường 9, Phú Nhuận, Hồ Chí Minh => 1.1km from my Center
11/12 Nguyễn Trọng Tuyển, Phường 15, Phú Nhuận, Hồ Chí Minh => 0.6km from my Center
251/4 Nguyễn Văn Trỗi, Phường 10, Phú Nhuận, Hồ Chí Minh => 3.6km from my Center
12/18 Chiến Thắng, Phường 9, Phú Nhuận, Hồ Chí Minh => 2.6km from my Center
94/8 Trần Khắc Chân, Phường 9, Phú Nhuận, Hồ Chí Minh => 1.9km from my Center
90A Nguyễn Trọng Tuyển, Phường 15, Phú Nhuận, Hồ Chí Minh => 0.5km from my Center
10/8i Trần Hữu Trang, Phường 11, Phú Nhuận, Hồ Chí Minh => 3.0km from my Center
73/2/3 Duy Tân, Phường 15, Phú Nhuận, Hồ Chí Minh => 1.3km from my Center
159/39E Hoàng Văn Thụ, Phường 8, Phú Nhuận, Hồ Chí Minh => 2.5km from my Center
76 Nguyễn Văn Trỗi, Phường 8, Phú Nhuận, Hồ Chí Minh => 2.7km from my Center
117 - 119 Nguyễn Văn Trỗi, Phường 12, Phú Nhuận, Hồ Chí Minh => 2.2km from my Center
194 Hoàng Văn Thụ, Phường 9, Phú Nhuận, Hồ Chí Minh => 3.2km from my Center



4. Results of Data Analysis

Visualizing the recommended locations

5. Conclusion

- ▶ The purpose of this project was to find the optimal location to open a coffee shop in Ho Chi Minh City.
- ▶ By computing coffee shop density distribution from Foursquare data
- ▶ Having identified areas that are likely to open a cafe based on the appropriate location criteria that are where the area has few cafes.

