Fine Great Food @ BKK

Bangkok Food & Restaurant
Data-assisted Suggestion

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Introduction

Introduction

- Thailand has more than 40 million tourists yearly
- In Bangkok, there is 10 million residents and 20 million tourists each year
- There is a high demand in food and restaurant services.
- This sector contributes highly to the national GDP
- People love to eat together with friends and family at restaurants

Business Problem

Business Problem

- The restaurant and food services are highly impacted by the COVID-19. They need to be promoted to people to help them recover from the recession.

- There is a problem about choosing the place to eat together for people that do not stay together.

- These problems can be mitigated if there is a restaurant recommendation service that recommends the high-rated restaurants at the right location that is convenient for everyone to travel to using rail public transportation.

Data

Data

- The data of the rail public transportation stations is collected and obtained by the author form Google Maps

- Then the data is stored in CSV format

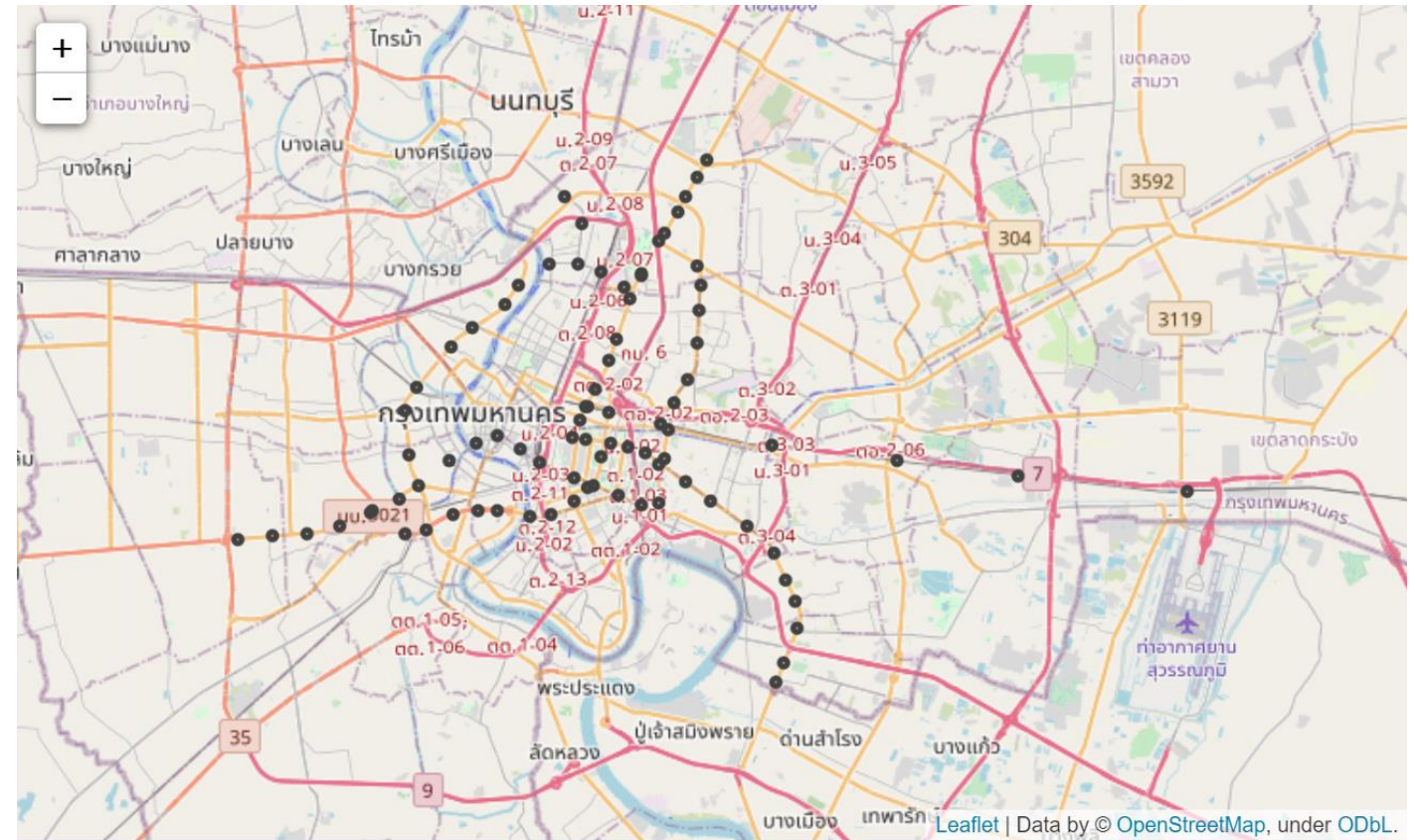- Foursquare data about food and restaurant services (location and rating) is also used

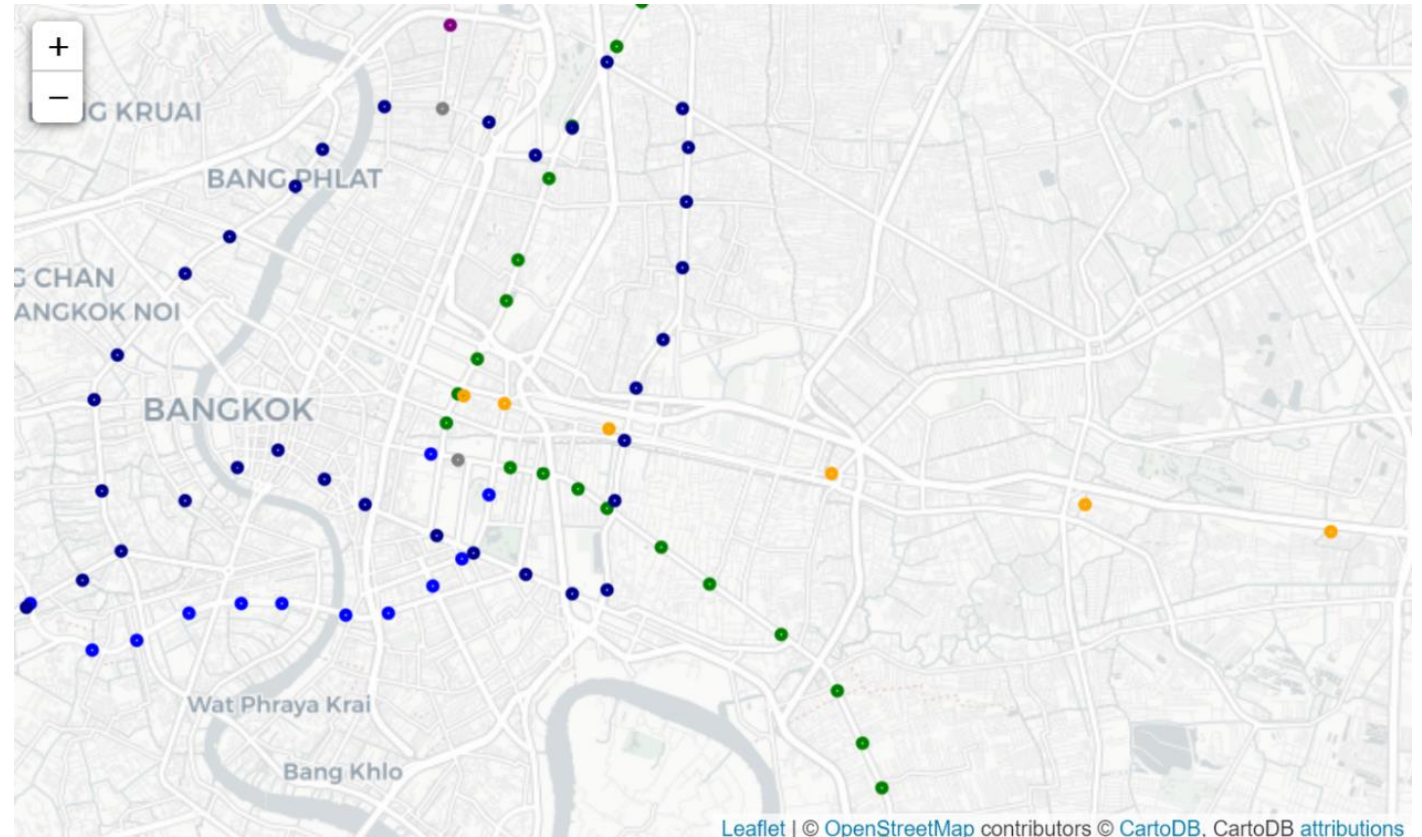| Service	Station	Lines	Latitude	Longitude	Is Opera
BTS	Siam	grey	13.75	100.53	TRUE
BTS	National Stadiur	blue	13.75	100.53	TRUE
BTS	Ratchadamri	blue	13.74	100.54	TRUE
BTS	Sala Daeng	blue	13.73	100.53	TRUE
BTS	Chong Nonsi	blue	13.72	100.53	TRUE
BTS	Surasak	blue	13.72	100.52	TRUE
BTS	Saphan Taksin	blue	13.72	100.51	TRUE
BTS	Krung Thon Buri	blue	13.72	100.5	TRUE
BTS	Wongwian Yai	blue	13.72	100.5	TRUE
BTS	Pho Nimit	blue	13.72	100.49	TRUE
BTS	Talat Phlu	blue	13.71	100.48	TRUE
BTS	Wutthakat	blue	13.71	100.47	TRUE
BTS	Bang Wa	blue	13.72	100.46	TRUE
BTS	Kasetsart Univer	green	13.84	100.58	TRUE
BTS	Sena Nikhom	green	13.84	100.57	TRUE
BTS	Ratchayothin	green	13.83	100.57	TRUE
BTS	Phahonyothin 24	green	13.82	100.57	TRUE
BTS	Ha Yaek Lat Phra	green	13.82	100.56	TRUE

Methodology

Methodology

- Plot the location of rail public transportation stations in Bangkok on the map
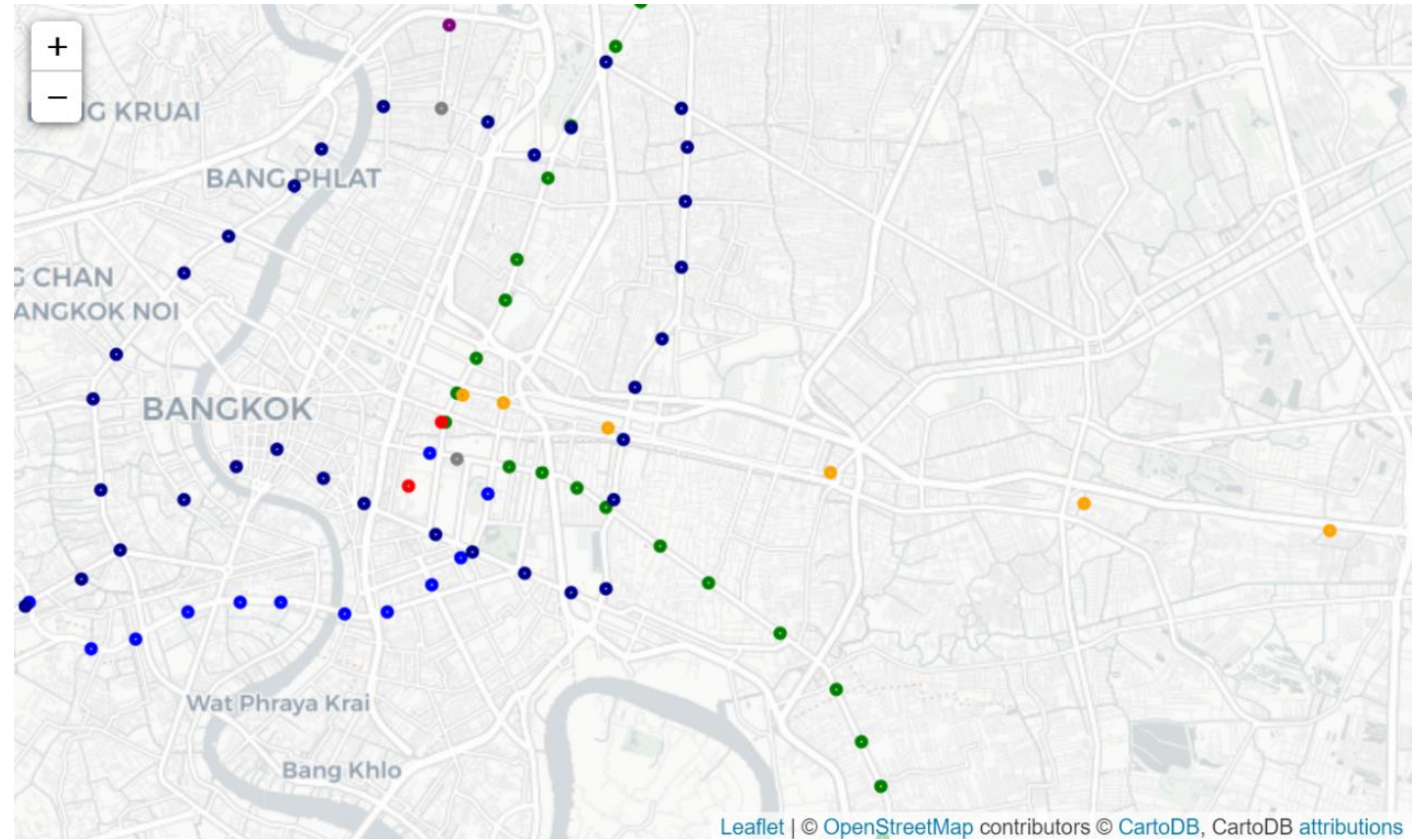
- Plot in dark grey color

Methodology

- Plot the station on the map again but change the color of each station according to the color of the rail line or the type of service
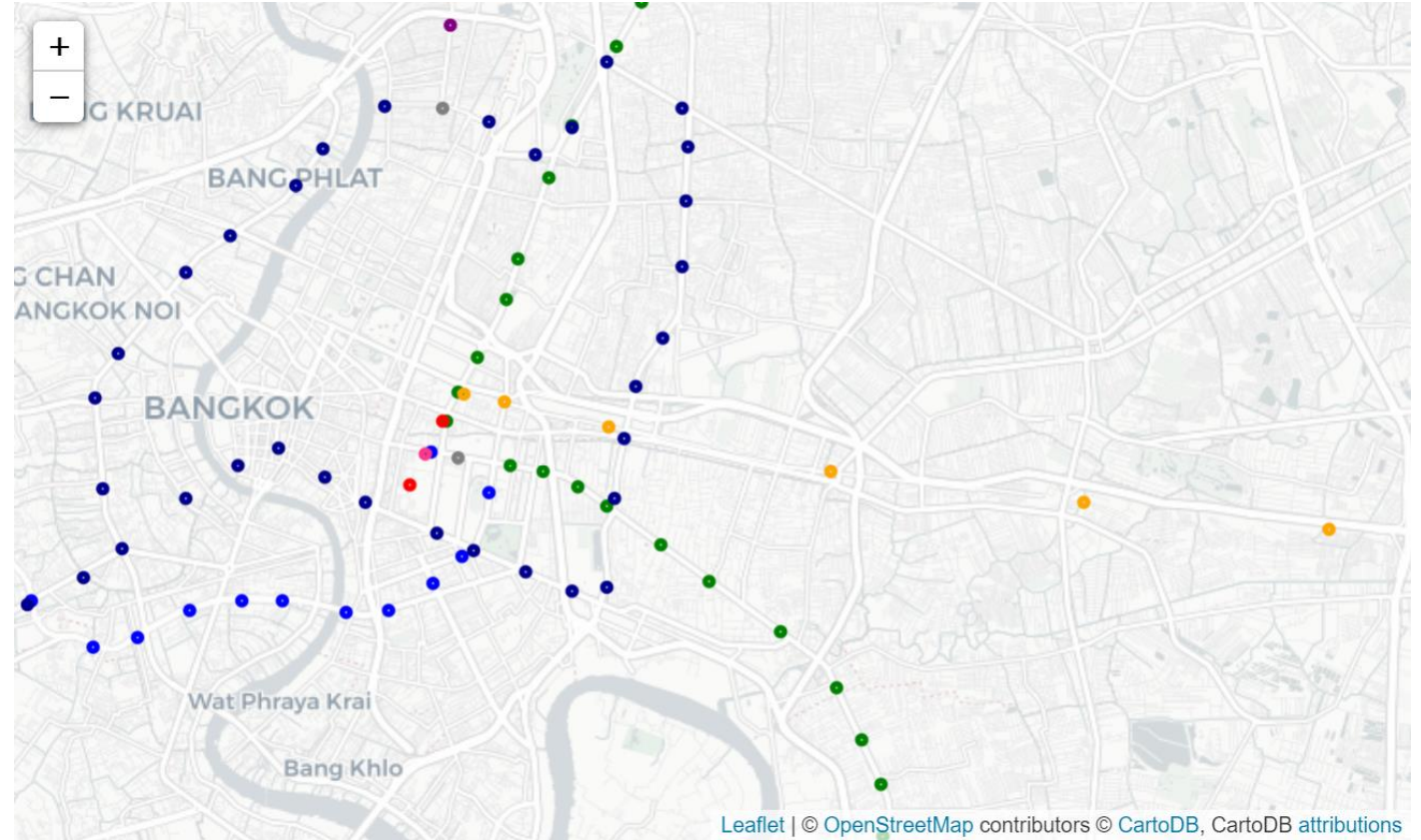
Methodology

- Ask for the input of location of people who would like to gather for eating at restaurant and food services

- Plot the location of the people in red on the same map

Methodology

- Find the point that is approximately equally far from everyone, called midpoint

- Midpoint should be the point that is the best and fair for eating together, as it is equally far from everyone (by distance)

- Midpoint is the position that has its latitude and longitude equal to the average latitude and longitude of all people involved

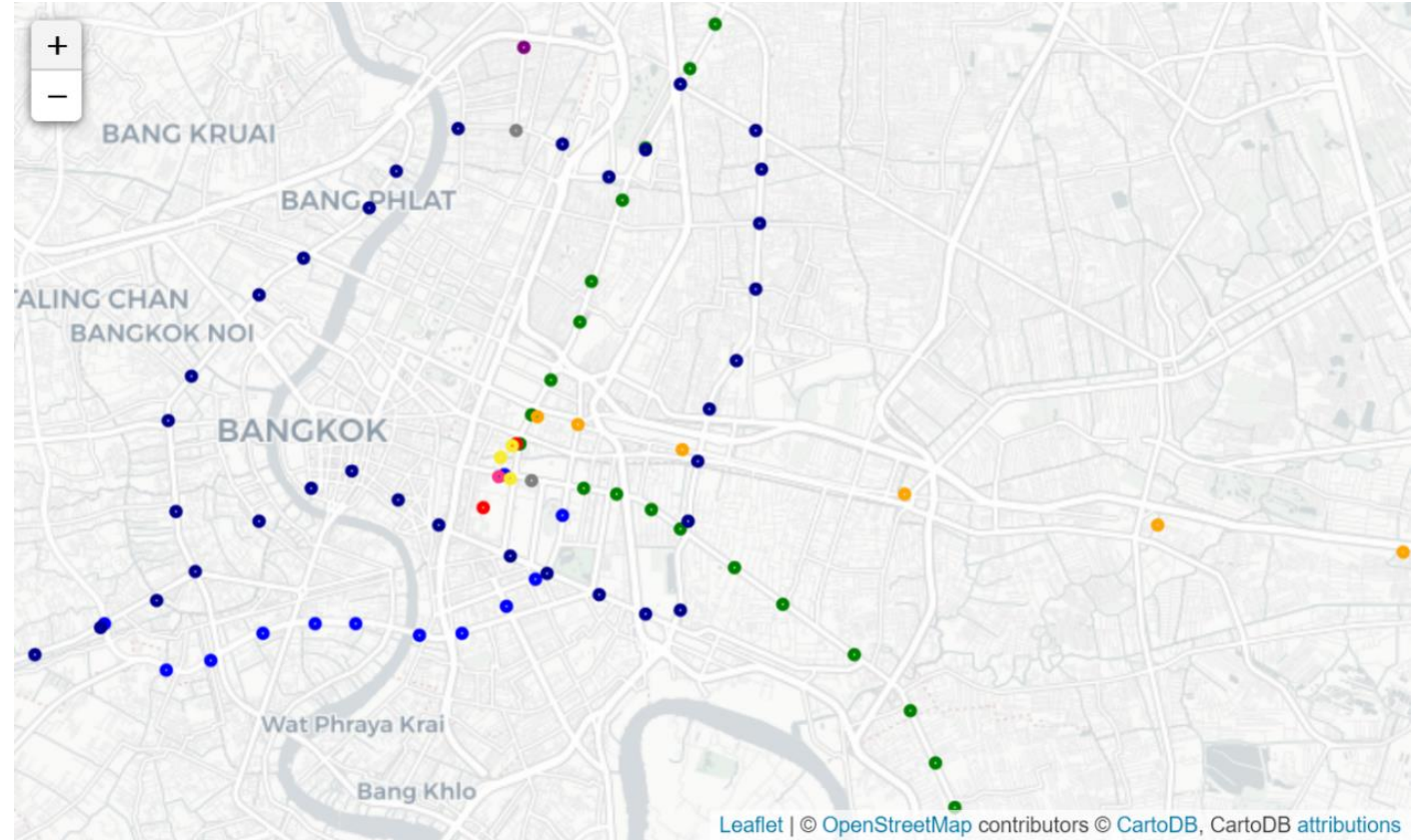- Plot the midpoint in pink on the same map

Methodology

- The distances from the midpoint to all stations are calculated and then stored in the new column of the transportation data frame

- Since most people in Bangkok use public transportation, the project should instead start searching for the restaurants from the station that is closest to the midpoint (as it is more feasible)

- The closest station to the midpoint can then be found easily by comparing all distance values.

- This station will be used as the center for searching restaurants and food services

	Service	Station	Lines	Latitude	Longitude	isOperating	Distance
0	BTS	Siam	grey	13.745511	100.533880	True	0.005773
1	BTS	National Stadium	blue	13.746345	100.528863	True	0.000749
2	BTS	Ratchadamri	blue	13.739500	100.539267	True	0.012957
3	BTS	Sala Daeng	blue	13.728426	100.534436	True	0.018800
4	BTS	Chong Nonsi	blue	13.723851	100.529450	True	0.022329

Methodology

- Get information of all restaurants (location, name, and rating) within 10-minute walking distance (800 m.) from the closest station to the midpoint by using Foursquare API

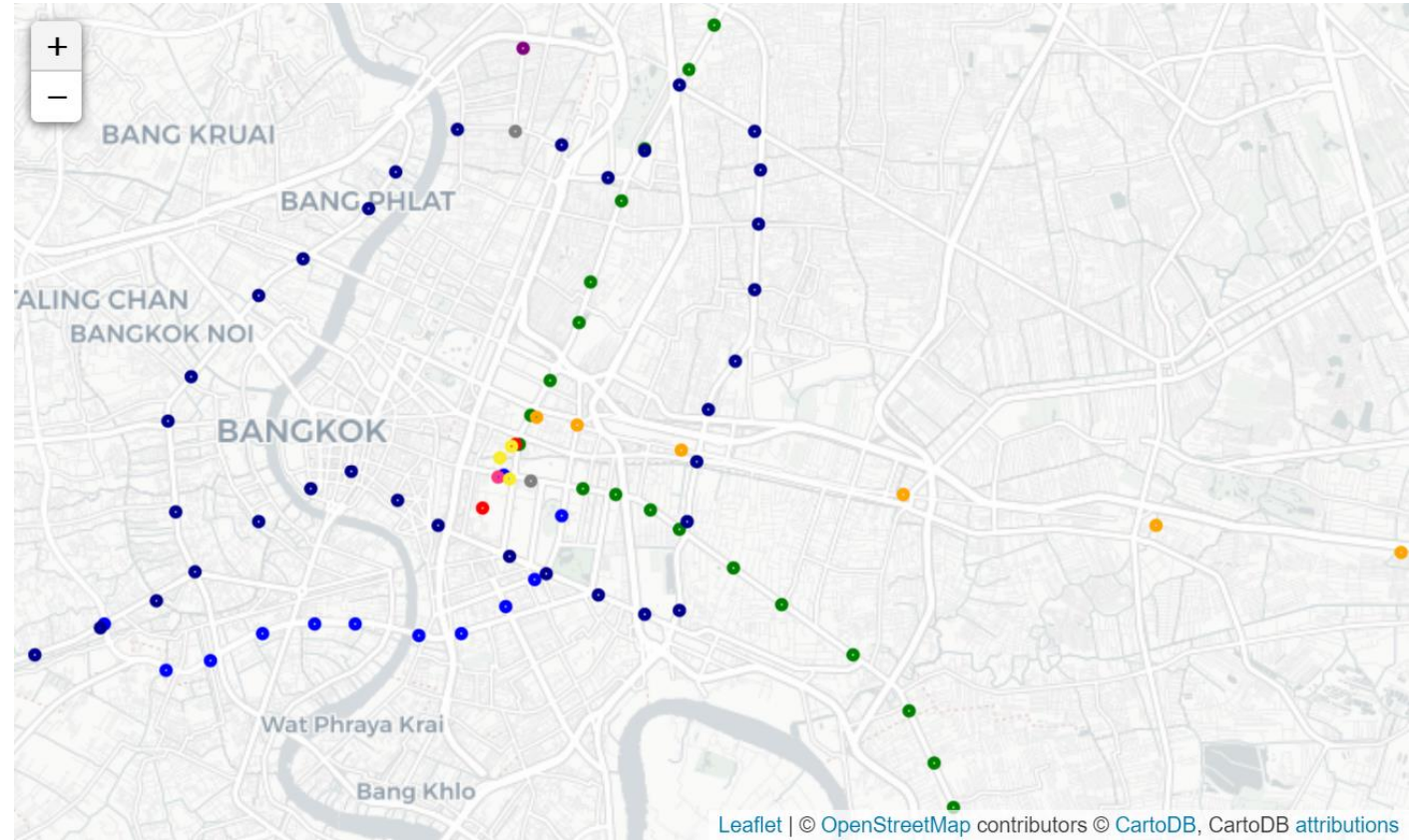- Then plot three restaurants with highest rating in the 800-meter radius on the map in yellow

Result

Result

- The suggested restaurant within 800 meters (10-minute walking distance) are listed down to suggest the people about the location to meet.

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Suggested Restaurant
1. Jim Thompson Bar & Restaurant
2. Yana Restaurant
3. The Great Wall Restaurant
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Result

- The suggested restaurant within 800 meters (10-minute walking distance) are plotted in yellow on the map to help users visualizing the location of all the three suggested restaurants on the same map.

Discussion

Discussion

- This project currently covers Bangkok area only
- The restaurant must be rated first in order to be suggested
- Future development may include the ways to rank restaurant in absence of rating
- The new ways may come from number of positive ratings and comments on a particular restaurant.

Conclusion

Conclusion

- This project aims to address the economic problem faced by restaurant and food services and a problem in choosing restaurant

- The solution is the restaurant suggestion system which can help people choosing restaurants and promote the restaurant at the same time

- The Foursquare and location of public transportation service data are used

- The project suggests the top three highly-rated restaurant at the right location to meet which is within 800 meters from the public transportation station that is approximately equally far from everyone

My Message

My Message

- Thank you for evaluating and reviewing my work
- Wish you have a nice day and stay healthy ☺