

Location Search: Cafe Landwer - Boston

July 30, 2020

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Introduction

Background, Problem, Questions

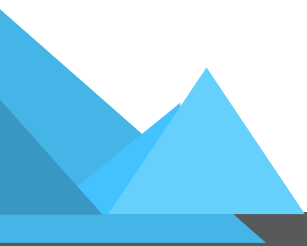
Background

- **Cafe Landwer** is a specialty **coffee shop** with trained baristas, full service, sit down and take out serving breakfast, lunch, and dinner.
- Menu is inspired by **Italian and Mediterranean cuisine**
- Established in Berlin in 1919
- 60 locations worldwide



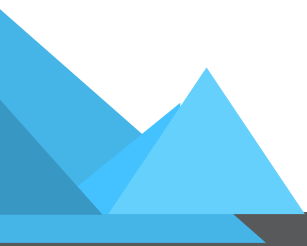
Problem

Find a **new location** for Cafe Landwer that is able to accommodate their **unique style, price, additional outdoor area, and customer base.**



Questions

1. Which Boston city has the most Coffee Shops/Cafes?
2. Which Metro-Boston location does their price range fit?
3. Are their current locations sufficient for business?
4. Is their current locations within similar style areas based on nearby venue types?



Data

Method - Idea, Boston Area, Foursquare, Outside Research

Method - Idea: Boston Area


Boston Area:

1. Extract Latitude and Longitudes from Metro-Boston Cities csv files



Method - Idea: Foursquare

Foursquare:

1. Collect data on most popular type of venue within each set area
 2. Limit search to areas with their price range
 3. Search the local cuisine of the area, exclude those with Cafe/Coffee Shops/ Mediterranean cuisine as most prominent
 4. Use k-means to find best location for new Cafe Landwer restaurant; given their 2 existing locations
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Method- Idea: Outside Research


Find potential commercial listings within the area for the proposal




Methodology

Methodology outline

Methodology Outline

1. Find all names of the cities that make up boston and convert to readable pandas file
 2. Convert SqMiles to Meters for approximation around the given city area
 3. Gather Latitude and Longitude from each city, (i)fill in missing data
 4. Check test cases for neighborhood information
 5. Get nearby venues types of the surrounding city (i) using method `get_category_type`
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Methodology Outline cont.

1. Get nearby venues of each area (i) using method `getNearbyVenues`
 2. Group the venues to collect the popularity of each type (i) search through newly acquired groups of venues
 3. Organize newly found data in table ascending in most common venue to least common
 4. Map data using folium.
 5. Describe data by clusters based on similar venue types
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Results

Cafe Most Common, K-Means Clustering, Interpretation

Most Common Venues

	OBJECTID	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	27	Roslindale	42.2912	-71.1245	3.0	Pizza Place	Cuban Restaurant	American Restaurant	Pool	Big Box Store	Rental Car Location	Donut Shop	Scenic Lookout	Doctor's Office	Farmers Market
1	28	Jamaica Plain	42.3098	-71.1203	0.0	Bakery	Donut Shop	Coffee Shop	Art Gallery	Noodle House	Liquor Store	Library	Bookstore	Bar	Seafood Restaurant
2	29	Mission Hill	42.3326	-71.1036	3.0	Sushi Restaurant	Sandwich Place	Pizza Place	Bar	Italian Restaurant	Coffee Shop	Pub	Donut Shop	Metro Station	Bank
3	30	Longwood	42.3417	-71.1099	4.0	Metro Station	Donut Shop	Hotel	Coffee Shop	Sandwich Place	Pharmacy	Fast Food Restaurant	Falafel Restaurant	Diner	Café
4	31	Bay Village	42.35	-71.0669	0.0	Sandwich Place	Hotel	Bakery	Italian Restaurant	Spa	Performing Arts Venue	Theater	Seafood Restaurant	Vegetarian / Vegan Restaurant	Dive Bar
5	32	Leather District	42.351	-71.0579	0.0	Chinese Restaurant	Bakery	Asian Restaurant	Coffee Shop	Sandwich Place	American Restaurant	Gym / Fitness Center	Sushi Restaurant	Restaurant	Noodle House
6	33	Chinatown	42.3494	-71.0636	0.0	Chinese Restaurant	Bakery	Asian Restaurant	Seafood Restaurant	Performing Arts Venue	Bubble Tea Shop	Sushi Restaurant	Coffee Shop	Dim Sum Restaurant	Dive Bar
7	34	North End	42.3651	-71.0545	0.0	Italian Restaurant	Pizza Place	Seafood Restaurant	Park	Café	Coffee Shop	Sandwich Place	Historic Site	Bakery	Sports Bar
8	35	Roxbury	42.3248	-71.095	2.0	Gym	Pizza Place	Plaza	Art Gallery	Rental Car Location	Furniture / Home Store	Discount Store	Falafel Restaurant	Electronics Store	Dumpling Restaurant
9	36	South End	42.3413	-71.0772	0.0	Italian Restaurant	Coffee Shop	Wine Bar	Park	Bar	Wine Shop	Gift Shop	Bakery	French Restaurant	Yoga Studio
10	37	Back Bay	42.3507	-71.0797	0.0	Coffee Shop	Italian Restaurant	Ice Cream Shop	American Restaurant	Seafood Restaurant	Clothing Store	New American Restaurant	Juice Bar	Hotel	Grocery Store
11	38	East Boston	42.3751	-71.0392	3.0	Pizza Place	Pharmacy	Sandwich Place	Art Gallery	Latin American Restaurant	Restaurant	Skate Park	Shopping Mall	Seafood Restaurant	Donut Shop
12	39	Charlestown	42.3779	-71.062	3.0	Pizza Place	Convenience Store	Pub	Gastropub	Liquor Store	Donut Shop	Coffee Shop	Yoga Studio	Restaurant	Plaza

Most Common Venues cont.

	OBJECTID	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
13	40	West End	42.3639	-71.0639	3.0	Hotel	Donut Shop	Pizza Place	Bar	Sandwich Place	Mexican Restaurant	Italian Restaurant	Coffee Shop	Sports Bar	Sporting Goods Shop
14	41	Beacon Hill	42.3587	-71.0678	0.0	Italian Restaurant	Pizza Place	Restaurant	Gourmet Shop	French Restaurant	Hotel Bar	American Restaurant	Park	Outdoor Sculpture	Ice Cream Shop
15	42	Downtown	42.2631	-71.802	3.0	Donut Shop	Sandwich Place	Café	History Museum	Rock Club	Pizza Place	Bistro	Food & Drink Shop	Restaurant	Cocktail Bar
16	43	Fenway	42.3454	-71.1043	0.0	Greek Restaurant	Café	Furniture / Home Store	Mexican Restaurant	Chinese Restaurant	Bakery	American Restaurant	Pub	Pedestrian Plaza	Park
17	44	Brighton	42.3501	-71.1564	3.0	Bus Station	Pizza Place	Bank	Bakery	Deli / Bodega	Dry Cleaner	Pub	Chinese Restaurant	Coffee Shop	Grocery Store
18	45	West Roxbury	42.2793	-71.1495	1.0	Home Service	Women's Store	Doctor's Office	Food	Fast Food Restaurant	Farmers Market	Falafel Restaurant	Electronics Store	Dumpling Restaurant	Dry Cleaner
19	46	Hyde Park	42.2557	-71.1245	3.0	American Restaurant	Pizza Place	Bank	Gym	Sandwich Place	Donut Shop	Discount Store	Bar	Italian Restaurant	Platform
20	47	Mattapan	42.2676	-71.0924	4.0	Metro Station	Southern / Soul Food Restaurant	Bakery	Convenience Store	Caribbean Restaurant	Mobile Phone Shop	Fast Food Restaurant	Food & Drink Shop	Pharmacy	Gym
21	48	Dorchester	42.2973	-71.0745	3.0	Market	Southern / Soul Food Restaurant	Fried Chicken Joint	Café	Plaza	Gym	Food	Pizza Place	Shoe Store	Vegetarian / Vegan Restaurant

Most Common Venues cont.

	OBJECTID	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
22	49	South Boston Waterfront	42.3334	-71.0495	3.0	Pizza Place	Bar	Liquor Store	Cosmetics Shop	Coffee Shop	Convenience Store	Italian Restaurant	Sports Bar	Office	Dog Run
23	50	South Boston	42.3334	-71.0495	3.0	Pizza Place	Bar	Liquor Store	Cosmetics Shop	Coffee Shop	Convenience Store	Italian Restaurant	Sports Bar	Office	Dog Run
24	51	Allston	42.3554	-71.1321	0.0	Korean Restaurant	Thai Restaurant	Bakery	Chinese Restaurant	Asian Restaurant	Pizza Place	Vegetarian / Vegan Restaurant	Dive Bar	Fried Chicken Joint	Pharmacy

K means Clustering: Group 1

	Neighborhood	ShapeSTArea	ShapeSTLength	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue
1	Jamaica Plain	1.097379e+08	56349.937161	42.3098	-71.1203	0	Bakery	Donut Shop	Coffee Shop	Art Gallery	Noodle House	Liquor Store	Library
4	Bay Village	1.156071e+06	4650.635493	42.35	-71.0669	0	Sandwich Place	Hotel	Bakery	Italian Restaurant	Spa	Performing Arts Venue	Theater
5	Leather District	6.812717e+05	3237.140537	42.351	-71.0579	0	Chinese Restaurant	Bakery	Asian Restaurant	Coffee Shop	Sandwich Place	American Restaurant	Gym / Fitness Center
6	Chinatown	3.324678e+06	9736.590413	42.3494	-71.0636	0	Chinese Restaurant	Bakery	Asian Restaurant	Seafood Restaurant	Performing Arts Venue	Bubble Tea Shop	Sushi Restaurant
7	North End	5.527506e+06	16177.826815	42.3651	-71.0545	0	Italian Restaurant	Pizza Place	Seafood Restaurant	Park	Café	Coffee Shop	Sandwich Place
9	South End	2.054000e+07	17912.333569	42.3413	-71.0772	0	Italian Restaurant	Coffee Shop	Wine Bar	Park	Bar	Wine Shop	Gift Shop
10	Back Bay	1.739407e+07	19455.671146	42.3507	-71.0797	0	Coffee Shop	Italian Restaurant	Ice Cream Shop	American Restaurant	Seafood Restaurant	Clothing Store	New American Restaurant
14	Beacon Hill	8.718800e+06	14303.829017	42.3587	-71.0678	0	Italian Restaurant	Pizza Place	Restaurant	Gourmet Shop	French Restaurant	Hotel Bar	American Restaurant
16	Fenway	2.442044e+07	24620.876452	42.3454	-71.1043	0	Greek Restaurant	Café	Furniture / Home Store	Mexican Restaurant	Chinese Restaurant	Bakery	American Restaurant
24	Allston	4.349599e+07	37859.091242	42.3554	-71.1321	0	Korean Restaurant	Thai Restaurant	Bakery	Chinese Restaurant	Asian Restaurant	Pizza Place	Vegetarian / Vegan Restaurant

K means Clustering: Group 2

	Neighborhood	ShapeSTArea	ShapeSTLength	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
18	West Roxbury	1.531747e+08	66067.419838	42.2793	-71.1495	1	Home Service	Women's Store	Doctor's Office	Food	Fast Food Restaurant	Farmers Market	Falafel Restaurant	Espresso

K means Clustering: Group 3

	Neighborhood	ShapeSTArea	ShapeSTLength	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
8	Roxbury	9.184455e+07	49488.800485	42.3248	-71.095	2	Gym	Pizza Place	Plaza	Art Gallery	Rental Car Location	Furniture / Home Store	Discount Store	Fala Rest

K means Clustering: Group 4

	Neighborhood	ShapeSTArea	ShapeSTLength	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Cor Ven
0	Roslindale	6.993827e+07	53563.912597	42.2912	-71.1245	3	Pizza Place	Cuban Restaurant	American Restaurant	Pool	Big Box Store	Rental Car Location	Dor Sho
2	Mission Hill	1.528312e+07	17918.724113	42.3326	-71.1036	3	Sushi Restaurant	Sandwich Place	Pizza Place	Bar	Italian Restaurant	Coffee Shop	Pub
11	East Boston	1.313845e+08	121089.100852	42.3751	-71.0392	3	Pizza Place	Pharmacy	Sandwich Place	Art Gallery	Latin American Restaurant	Restaurant	Ska
12	Charlestown	3.796418e+07	57509.688645	42.3779	-71.062	3	Pizza Place	Convenience Store	Pub	Gastropub	Liquor Store	Donut Shop	Cof Sho
13	West End	8.297743e+06	17728.590027	42.3639	-71.0639	3	Hotel	Donut Shop	Pizza Place	Bar	Sandwich Place	Mexican Restaurant	Itali Res
15	Downtown	1.731385e+07	34612.804441	42.2631	-71.802	3	Donut Shop	Sandwich Place	Café	History Museum	Rock Club	Pizza Place	Bist
17	Brighton	8.016788e+07	48787.519652	42.3501	-71.1564	3	Bus Station	Pizza Place	Bank	Bakery	Deli / Bodega	Dry Cleaner	Pub
19	Hyde Park	1.275092e+08	66861.244955	42.2557	-71.1245	3	American Restaurant	Pizza Place	Bank	Gym	Sandwich Place	Donut Shop	Disc Sto
21	Dorchester	2.031142e+08	104344.034005	42.2973	-71.0745	3	Market	Southern / Soul Food Restaurant	Fried Chicken Joint	Café	Plaza	Gym	Foo
22	South Boston Waterfront	2.708740e+07	38391.352905	42.3334	-71.0495	3	Pizza Place	Bar	Liquor Store	Cosmetics Shop	Coffee Shop	Convenience Store	Itali Res
23	South Boston	6.272131e+07	64998.420283	42.3334	-71.0495	3	Pizza Place	Bar	Liquor Store	Cosmetics Shop	Coffee Shop	Convenience Store	Itali Res

K means Clustering: Group 5

	Neighborhood	ShapeSTArea	ShapeSTLength	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue
3	Longwood	8.215904e+06	11908.757148	42.3417	-71.1099	4	Metro Station	Donut Shop	Hotel	Coffee Shop	Sandwich Place	Pharmacy	Fast Food Restaurant
20	Mattapan	5.889717e+07	42005.773707	42.2676	-71.0924	4	Metro Station	Southern / Soul Food Restaurant	Bakery	Convenience Store	Caribbean Restaurant	Mobile Phone Shop	Fast Food Restaurant

Interpretation: Location

Location: Cafe Landwer **currently** has locations **in** Fenway(2nd most popular venue, **Cluster 1**) and Brighton(9th most popular venue, **Cluster 4**).



Interpretation: Price

Since their price is regarded as **category 1**, the least expensive price type, their locations of similar venues are not as reflective of the areas since their locations can be assumed to **not** be **dependent** for them on the average **price** of restaurant **within** the **area**.



Discussion

Limit Search

Limit Search

1

Price

Search within areas of similar price

2

Cluster

Search in areas most similar style to their current locations

3

Venue Commonality

Search in location where Cafe isn't the most common venue type in the area

4

Distance from Locations

Must be within close proximity to the existing Cafe Landwer locations

5

Close Proximity to MBTA

Nearby close T train stops for all socioeconomic groups to have access to their locations.

Search within areas of similar price

1. Since Price is not a determining factor we do not exclude any areas from the list

- Back Bay
- South End
- Fenway
- Downtown
- Jamaica Plain
- Hyde Park
- Leather District
- Dorchester
- North End
- Longwood
- Roslindale
- Bay Village
- Roxbury
- East Boston
- Beacon Hill
- West Roxbury
- Mattapan
- South Boston
- Waterfront
- South Boston
- Mission Hill
- Charlestown
- West End
- Chinatown
- Brighton
- Allston

Current: 25
Eliminated: 0

Search within areas of similar price

We limit to areas within the same clusters as current locations. (Cluster 1 and Cluster 4)

- Back Bay
- South End
- Fenway
- Downtown
- Jamaica Plain
- Hyde Park
- Leather District
- Dorchester
- North End
- ~~● Longwood~~
- Roslindale
- Bay Village
- ~~● Roxbury~~
- East Boston
- Beacon Hill
- ~~● West Roxbury~~
- ~~● Mattapan~~
- South Boston
- Waterfront
- South Boston
- Mission Hill
- Charlestown
- West End
- Chinatown
- Brighton
- Allston

Current: 21

Eliminated: 4

Search within areas of similar price

We limit to areas where Cafe/Coffee Shop/Mediterranean isn't the most common and currently present

- ~~Back Bay~~
- ~~South End~~
- ~~Fenway~~
- ~~Downtown~~
- ~~Jamaica Plain~~
- ~~Hyde Park~~
- ~~Leather District~~
- ~~Dorchester~~
- ~~North End~~
- ~~Longwood~~
- Roslindale
- Bay Village
- ~~Roxbury~~
- East Boston
- Beacon Hill
- ~~West Roxbury~~
- ~~Mattapan~~
- ~~South Boston~~
- ~~Waterfront~~
- ~~South Boston~~
- ~~Mission Hill~~
- ~~Charlestown~~
- ~~West End~~
- ~~Chinatown~~
- ~~Brighton~~
- Allston

Current: 5
Eliminated: 20

Search within areas of similar price

We limit to areas where the distance is not greater than 2.5 miles from one of the existing locations

- ~~Back Bay~~
- ~~South End~~
- ~~Fenway~~
- ~~Downtown~~
- ~~Jamaica Plain~~
- ~~Hyde Park~~
- ~~Leather District~~
- ~~Dorchester~~
- ~~North End~~
- ~~Longwood~~
- ~~Roslindale~~
- Bay Village
- ~~Roxbury~~
- ~~East Boston~~
- Beacon Hill
- ~~West Roxbury~~
- ~~Mattapan~~
- ~~South Boston~~
- ~~Waterfront~~
- ~~South Boston~~
- ~~Mission Hill~~
- ~~Charlestown~~
- ~~West End~~
- ~~Chinatown~~
- ~~Brighton~~
- Allston

Current: 3
Eliminated: 22

Search within areas of similar price

We limit to areas where there is a walking distance from a local T train Stop

● ~~Back Bay~~

● ~~South End~~

● ~~Fenway~~

● ~~Downtown~~

● ~~Jamaica Plain~~

● ~~Hyde Park~~

● ~~Leather District~~

● ~~Dorchester~~

● ~~North End~~

● ~~Longwood~~

● ~~Roslindale~~

● Bay Village

● ~~Roxbury~~

● ~~East Boston~~

● Beacon Hill

● ~~West Roxbury~~

● ~~Mattapan~~

● ~~South Boston~~
~~Waterfront~~

● ~~South Boston~~

● ~~Mission Hill~~

● ~~Charlestown~~

● ~~West End~~

● ~~Chinatown~~

● ~~Brighton~~

● Allston

Current: 3
Eliminated: 22

Conclusion

Conclusion, Potential Listings

Conclusion

Based on this approach, it would recommend to Cafe Landwer that they search for a new location within **Allston, Beacon Hill, and Bay Village.**

All of these locations are:

1. In similar locations based on venue similarity of area
2. Cafe/Coffee Shop is least common venue of that area
3. Within 2.5 mi of a given Cafe Landwer Location
4. Within Close Proximity to the T train(Walking Distance).

Potential Listings

Beacon Hill



1 Charles St S
One Charles Boston

Boston, MA

4 Star | Built in 2005
600 SF Retail Space
\$6.94 SF/YR