

IBM Data Science Professional Certificate
Course No.9: Applied Data Science
Capstone
(The Battle of Neighborhoods)



Best Boroughs to Open an Indian Restaurant in San Francisco Bay Area



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Objective:

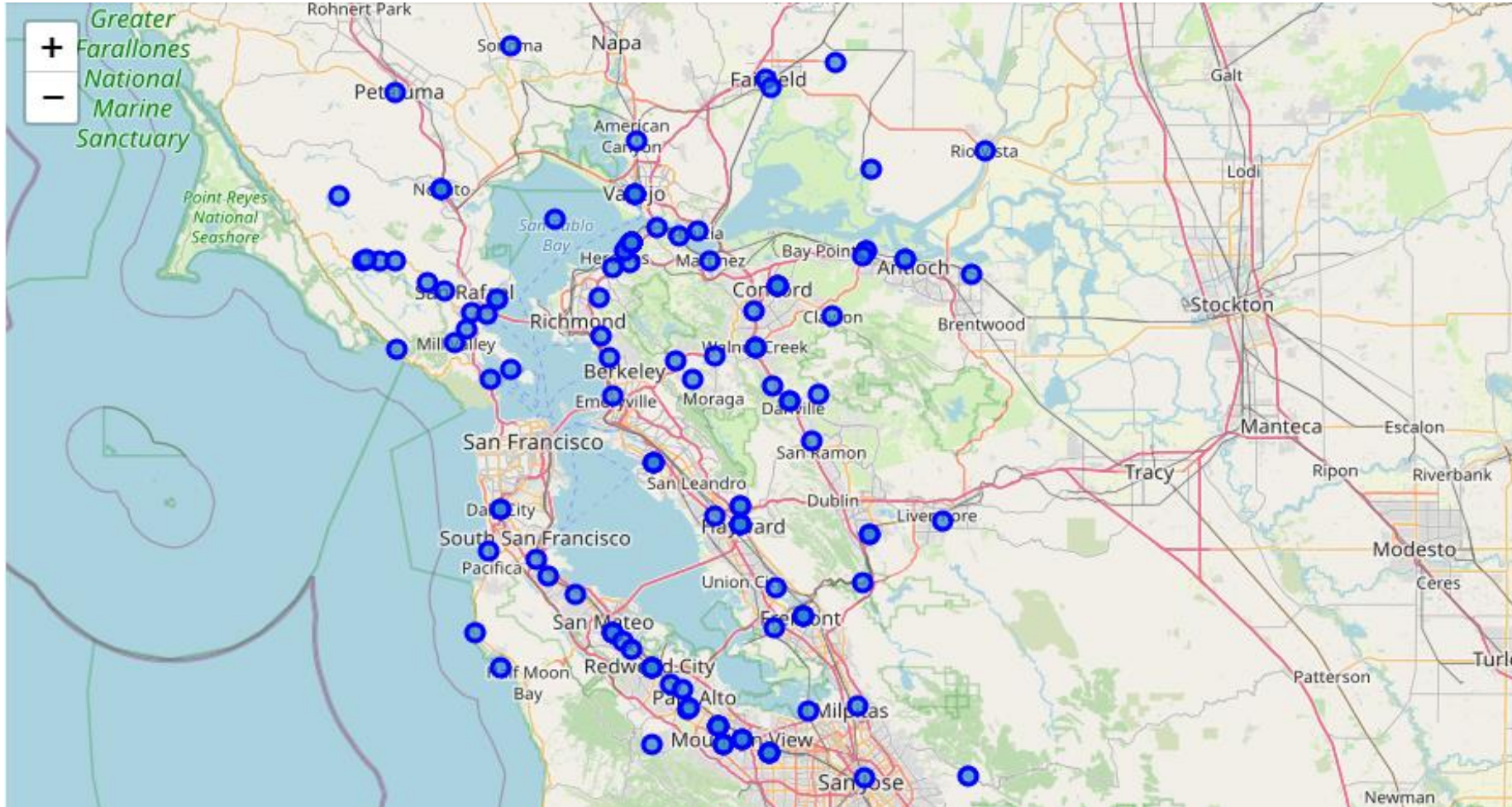
The main objective of the project is to find best boroughs in the San Francisco Bay Area to start a new Indian restaurant business.



Analytic Approach:

- ❑ Find borough where there are a lot of eateries in the Bay area. Then these boroughs are used as “Center of Attraction” for dining with different food varieties.
- ❑ Avoid boroughs with existing Indian restaurants;
- ❑ Select clusters that are similar to boroughs where Indian restaurants are located.

San Francisco Bay Area Boroughs



- 9 Counties
- 186 ZIP Codes
- 97 Boroughs
- Multicultural
- Tourism attractions

Data sources



DataSF

<https://datasf.org/opendata/>



FOURSQUARE

<https://foursquare.com/>

- The San Francisco Bay Area ZIP codes and PO_NAME are downloaded from DataSF open data website.
<https://data.sfgov.org/api/views/f9wk-m4qb/rows.csv?accessType=DOWNLOAD>
- Dataframe is generated with ZIP codes and PO_NAME by renaming PO_NAME to 'Borough'.
- The geographical coordinates are retrieved for each borough using geocoder.
- Foursquare AIP service is used to explore venues for each borough within 1000 m radius.

San Francisco Bay Area

Boroughs vs restaurants, cafes, pubs, bars, cuisines

Top 25 Boroughs with restaurants and cafés:

Borough	
HAYWARD	180
REDWOOD CITY	176
SUNNYVALE	160
FREMONT	124
WALNUT CREEK	117
SAN FRANCISCO	81
NOVATO	78
MOUNTAIN VIEW	72
PLEASANTON	66
CONCORD	64
PALO ALTO	60
SAN MATEO	60
SAN JOSE	53
CASTRO VALLEY	48
SAN CARLOS	46
LOS ALTOS	44
ALBANY	39
DALY CITY	38
SAN BRUNO	36
MENLO PARK	34
MILLBRAE	32
LAFAYETTE	32
SONOMA	30
PLEASANT HILL	30
VALLEJO	28

- Top 25 borough with restaurants, cafes, pubs, bars, cuisines in the Bay area.

Boroughs with No Indian restaurants

Borough	
SAN FRANCISCO	81
PALO ALTO	60
SAN MATEO	60
LOS ALTOS	44
DALY CITY	38
MENLO PARK	34
PLEASANT HILL	30
VALLEJO	28

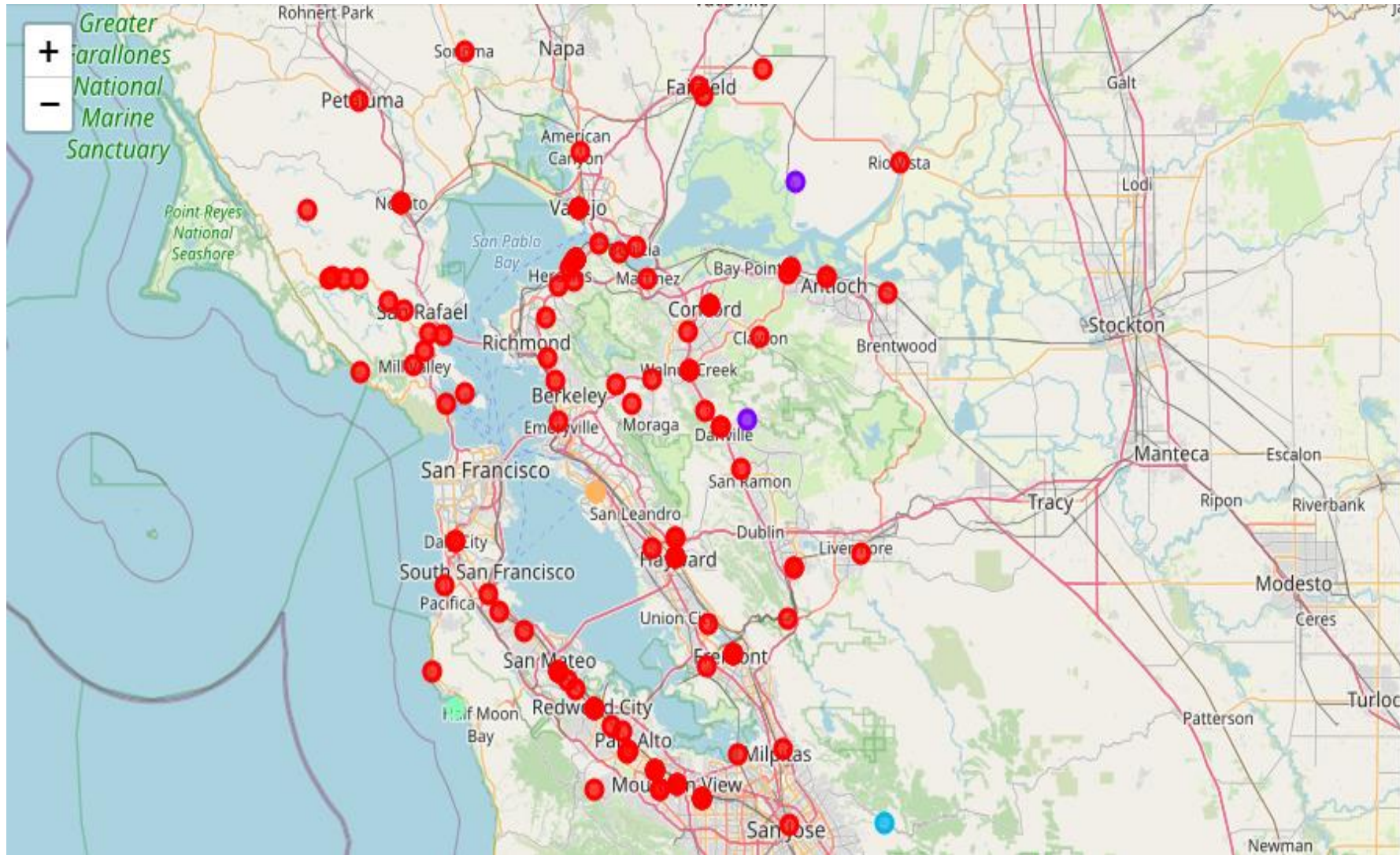
- There are 52 well-known Indian restaurants in the Bay area boroughs within 1000 m radius from geographical coordinates.
- There are **8 boroughs with no Indian restaurants out of top 25 boroughs** with restaurants, cafes, bars, pubs, cuisines in the Bay area.

Top 10 venues for each borough

	Borough	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	ALAMEDA	Coffee Shop	Beach	Pool	Skating Rink	Gastropub	Grocery Store	Marijuana Dispensary	Gym / Fitness Center	Arts & Crafts Store	Harbor / Marina
1	ALAMO	Coffee Shop	Pharmacy	Pizza Place	American Restaurant	Sandwich Place	Bank	Fast Food Restaurant	New American Restaurant	Gas Station	Chinese Restaurant
2	ALBANY	Thai Restaurant	Coffee Shop	Pizza Place	Sporting Goods Shop	Indian Restaurant	Pet Store	Mexican Restaurant	Café	Bar	Brewery
3	ALVISO	Food Truck	Hotel	Mexican Restaurant	Hotel Bar	Coffee Shop	Bar	Electronics Store	Café	Gym	Trail
4	AMERICAN CANYON	Park	ATM	Pharmacy	Pizza Place	Chinese Restaurant	Shopping Mall	Convenience Store	Hotel	Brewery	Thrift / Vintage Store

- There are 353 unique venue categories.

K-means clustering: similar boroughs



Results

- DALY CITY, MENLO PARK and PLEASANT HILL are the best boroughs for a new Indian restaurant business in the San Francisco Bay Area.
- DALY CITY, MENLO PARK and PLEASANT HILL boroughs are similar to boroughs where existing Indian restaurants are located.

Conclusions

The best boroughs to open an Indian restaurant in the Bay area are:

DALY CITY



MENLO PARK



PLEASANT HILL



*Thank
you*

