**Capstone Project - The Battle of Neighborhoods**

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Location recommendation for a new vegetarian restaurant

opening in San Francisco, California

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# Business Problem and Background:

Restaurants are one of the most important business in the world. In the San Francisco bay area , it is even more important to have a right restaurant in right place to have a successful business, because the cost in the San Francisco is very high for a new business like restaurant.

The business plan is to open a new vegetarian restaurant in the City of San Francisco, California and the following are the very important questions to be answered properly before starting the business:

* The locations of vegetarian restaurants in san Francisco?
* Ratio of Vegetarian places to total number of restaurants?
* Where is the most dense area for restaurants?
* Where is the most dense neighborhood for vegetarian restaurants?
* What are the rating of the Vegetarian restaurants?
* What is the percentages of vegetarian population in the area? (if possible)

# Data Source and Description:

San Francisco neighborhood data will be obtained via web scraping. The geographical longitude and latitudes of each neighborhoods will be obtained using ‘geopy.geocoders’ python library. The location data will be obtained for ‘foursquare.com’ data base and will be based on the geographical coordinates. The registered credentials of foursquare API will be used for obtaining the venues, user, rating, tips, etc. data.

This section will be done in the following steps:

1. Find the neighborhoods
2. Obtain the geographical coordinates
3. Get location data from foursquare API
4. Clean the data and create data frame
5. Explore the neighborhoods
6. Analyze each neighborhood
7. Make a data frame for vegetarian restaurant
8. Group by neighborhood
9. Clustering Neighborhoods using K-means clustering
10. Visualizing the resulting clusters
11. Making recommendation for a vegetarian restaurant location