

# Opening a restaurant in San Francisco

# Introduction

- There is always a demand for restaurants to open in San Francisco as there is a large variety of cuisines from around the world that people are willing to try.
- San Francisco is a large world class destination in the entire world and the USA with attractions such as the Golden Gate Bridge.
- It is the largest tech hub in the USA with around 800,000 people living in it and with a decent amount of public transportation such as BART and MUNI.
- The vast amount of residents are very high income, well educated, diverse and mostly work in the tech industry.

# Data Description

- The list of neighborhoods was gathered from Wikipedia.
- The list of venues for each venue was gathered from the Foursquare API.
- The coordinates for each neighborhood was gathered using geocoder.
- The python code was written in Jupyter Notebook using Anaconda and also used built in libraries such as Pandas, Numpy, Matplotlib, and SKLearn as well as BeautifulSoup, Geocoder, and Folium.

# Methodology

- BeautifulSoup was used to parse the html file of the Wikipedia page for the list of SF neighborhoods to get the list of neighborhoods of SF and put it in a Pandas data frame for analysis.
- All the Python code was written in Jupyter Notebook.
- Geocoder was used to obtain the coordinates of the SF neighborhoods.
- The maps of the coordinate and clusters was made using Folium.
- Kmeans Clustering using SKLearn was used to create the clusters and analyze which neighborhoods had the most restaurants in which clusters.
- The foursquare API was used to find the top 10 most popular venues for each neighborhood of SF.

# Results

- The most restaurants appear to be in the green cluster which is located near the ocean and parks.
- The least amount of restaurants are in the middle neighborhoods of SF which are mostly residential in the red clusters.

# Discussion

- The best place to open a new restaurants would be in the red cluster where there are the least amount of restaurants.
- The foursquare api was used to calculate the top 10 most popular venue for each neighborhood in SF.

# Conclusion

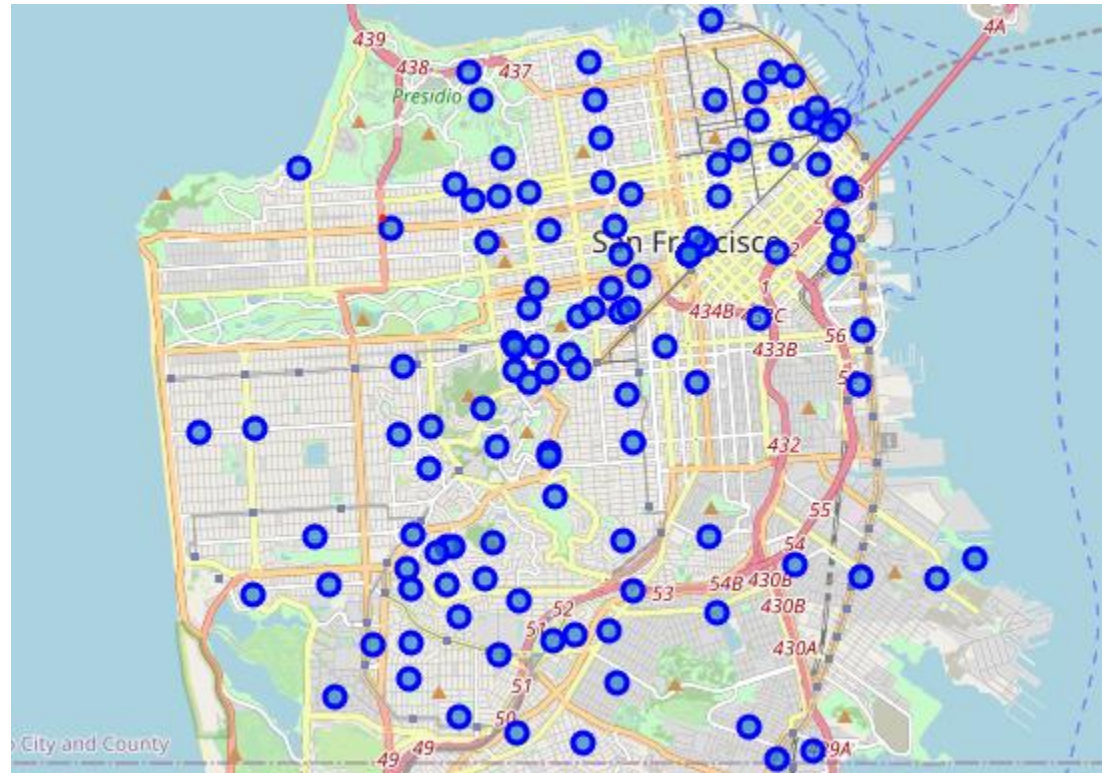
- The best place to open up a restaurant in San Francisco is in the residential areas which are not in the tourist areas because there is a large competition for restaurants to operate over there and residents of SF would like to eat in restaurants which are close by and would like to enjoy a large variety of cuisines.

# References

- [https://en.wikipedia.org/wiki/List of neighborhoods in San Francisco](https://en.wikipedia.org/wiki/List_of_neighborhoods_in_San_Francisco)
- [https://en.wikipedia.org/wiki/San Francisco](https://en.wikipedia.org/wiki/San_Francisco)
- <https://www.niche.com/places-to-live/san-francisco-san-francisco-ca/>
- <https://developer.foursquare.com/>



# Map of San Francisco and the neighborhood coordinates



# Map of SF and cluster of neighborhoods with most and least restaurants

