

CAPSTONE PROJECT

THE BATTLE OF NEIGHBORHOODS - FINAL REPORT

NEIGHBORHOOD TO MOVE IN SF BAY AREA FOR
MILLENNIALS



INTRODUCTION

Silicon Valley is the top job destination for young millennials working in tech sectors. Even at a ten-year low, San Francisco Bay area added 38,000 net residents. A typical household in bay area earns around \$96K compared to national median income of \$57 K (Reference: [weath-maps-cities-san-francisco-bay-area](#)).

Despite region's wealth, younger homeownership rate is a fraction of what it is elsewhere. Thus, bay area has been on a rental apartment construction drive for a last decade. With abundance of places to stay, it has been confusing for several new arrivers to figure out where to rent. Bay area lease terms are at minimum a year with significant amount for deposit. Thus, make a right decision is crucial.

BUSINESS PROBLEM

With this issue of choice overload, it will be useful for millennials moving in to bay area, to have neighborhoods classified for them to make an informed judgement.

In order to make recommendations, there are two factors to be considered – Desired lifestyle & budget

Life Style

Target age group will prefer an active lifestyle which has a significant level of “Things to Do” in a walking distance.

Based on the Bookings article “The millennial generation: A demographic bridge to America’s diverse future” <https://www.brookings.edu/research/millennials/>, millennials prefer marrying to other races. Thus, this age group also prefers high ethnic diversity and having a diverse neighborhood should be of higher attraction.

Cost of Living

Since the target demography is Millennials, its crucial to keep in mind the cost of living. Rent cost is the biggest factor in bay area which determines the cost of living. This app will also classify the neighborhoods based on their average cost of living.

Data

There are four main types of data we will need for this project:

1. SF Neighborhood Data
2. SF Diversity Data
3. SF Rental Data
4. Things to Do Data

SF Neighborhood Data

For the SF Neighborhood, we will need three types of data:

1. Longitude/Latitude
2. Zip Codes
3. Neighborhood Names

We will get the Zip Code and Longitude/Latitude data from geonames.org. They have San Francisco data on the following webpage <https://www.geonames.org/postal-codes/US/CA/075/san-francisco.html>

Once we have that data, we will have to merge it with the neighborhood data which is made available by www.healthysf.org on their webpage <http://www.healthysf.org/bdi/outcomes/zipmap.htm>

SF Diversity Data

For this project, we will consider diversity as the average population of a region divide by the maximum population for a given race. The larger this number, more diverse the neighborhood.

Please Note: This theory fails if only two races live in the neighborhood with equal population. However, this type of demography doesn't exist in a diverse area like San Francisco

To calculate this information, we will take the census data from "Bay Area Census". This information is available at <http://www.bayareacensus.ca.gov/small/PL94-171CensusTracts.xls>

This data is available by TRACT which is a subsection of the zip code. By attaching "94" as prefix to this, I can get the census by zip code and merge it to SF Neighborhood data

SF Rental Data

Government maintains median rent for a given zip code for the whole country. This data is available at <https://www.hud.gov/sites/dfiles/Housing/documents/2020MedianGrossRentbyZipCode.xlsx>

Since the data is available at Zip Code level, it can be easily joined with the SF Neighborhood data

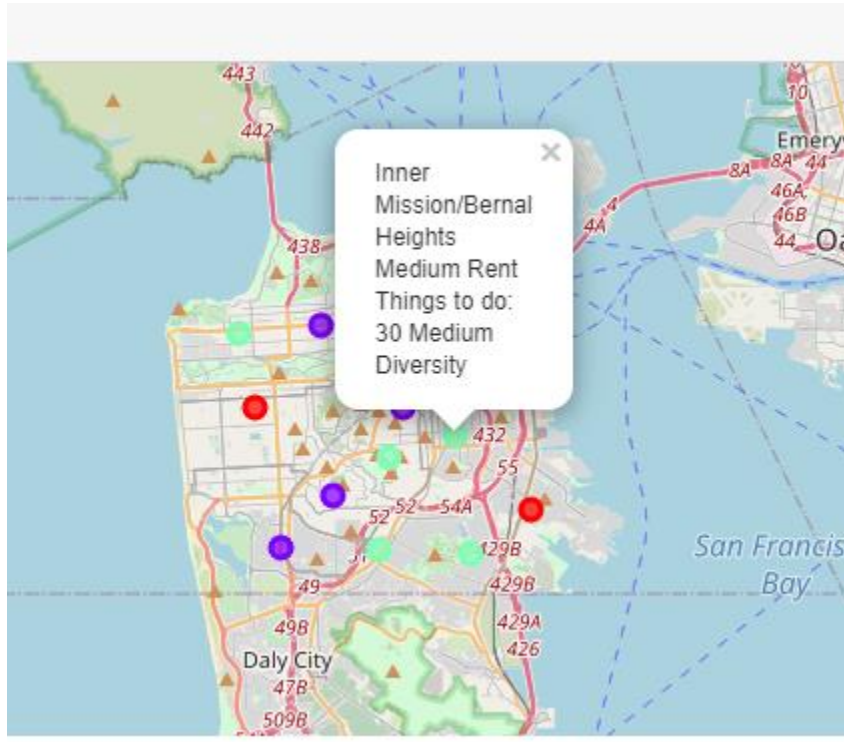
Things to Do Data

To get this information, I will be using the Foursquare API. Since I have the neighborhood, longitude, latitude data available in "SF Neighborhood Data" I will be able to get the "venue Category" from the explore function.

I can further count the number of "Venue Category" to calculate things to do in that Neighborhood

Information for the User

For Anyone moving to SF Bay Area, I have an interactive map which will provide information about every neighborhood.



User can click on all the neighborhoods and look at various choices available to them. In this interactive map, they can even evaluate other criterias like – “How far it is from freeway”, “Distance to the beach” etc.

Recommendation

Below table shows the Neighborhoods classified by the three criterias:

	Neighborhood	Rent Level	Things to do	Diversity of Neighborhood
0	Potrero Hill	Medium Rent	30	Medium Diversity
1	St. Francis Wood/Miraloma/West Portal	High Rent	6	Low Diversity
2	Marina	Medium Rent	30	High Diversity
3	South of Market	Low Rent	30	Medium Diversity
4	Lake Merced	Medium Rent	19	Low Diversity
5	North Beach/Chinatown	Low Rent	30	Low Diversity
6	Twin Peaks-Glen Park	Medium Rent	19	Medium Diversity
7	Hayes Valley/Tenderloin/North of Market	Low Rent	30	Low Diversity
8	Castro/Noe Valley	Medium Rent	30	Low Diversity
9	Western Addition/Japantown	Medium Rent	30	Medium Diversity
10	Bayview-Hunters Point	Low Rent	25	High Diversity
11	Haight-Ashbury	Medium Rent	30	High Diversity
12	Inner Richmond	Medium Rent	30	Low Diversity
13	Visitacion Valley/Sunnydale	Medium Rent	4	Medium Diversity
14	Outer Richmond	Medium Rent	30	Medium Diversity
15	Sunset	Medium Rent	30	High Diversity
16	Polk/Russian Hill (Nob Hill)	Medium Rent	30	Medium Diversity
17	Ingelside-Excelsior/Crocker-Amazon	Medium Rent	30	Medium Diversity
18	Inner Mission/Bernal Heights	Medium Rent	30	Medium Diversity

Based on this data, places like “Bayview-Hunters Point” or “Haight-Ashbury” will be a neighborhood where millennial renters will get a great value for money