

Capstone Project - The Battle of Neighborhoods

“Finding best neighborhoods in Downtown San Diego to open a French Restaurant”

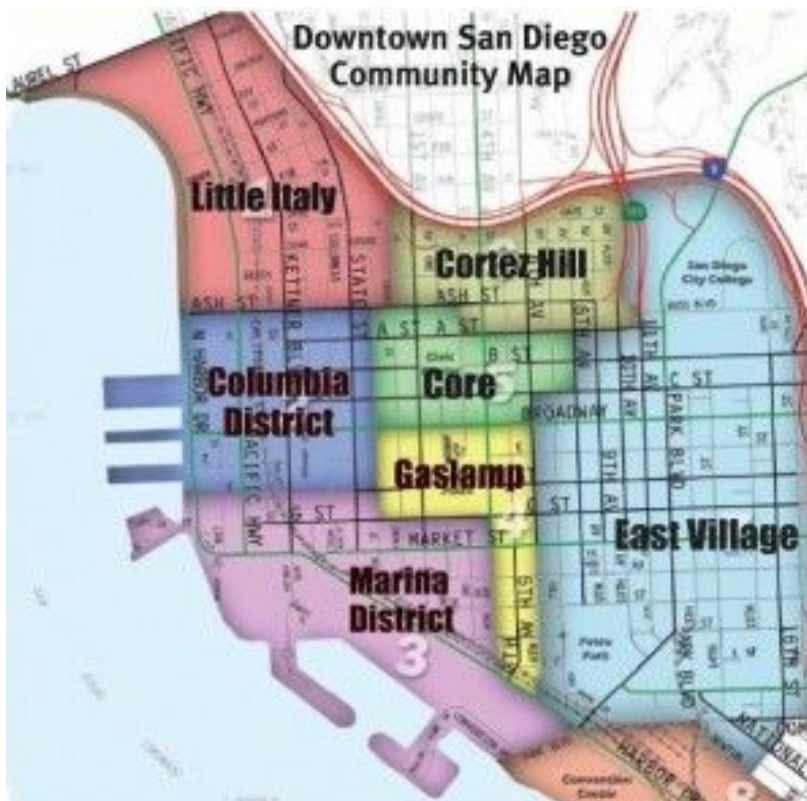


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1. Introduction and Business problem statement

Our client “**XYZ French food chain**” is interested in opening a **new French Restaurant** in **Downtown San Diego** neighborhood. For that they have asked us to do research of Downtown San Diego area and suggest probable locations for opening a new French restaurant.

Downtown San Diego is the city center of San Diego, California, the eighth largest city in the United States. Downtown San Diego serves as the cultural and financial center and central business district of San Diego, with more than 4,000 businesses and following neighborhoods

Columbia - the west district of downtown. Located between the Marina and Little Italy, west of Columbia Street

Civic Core - District, the central business district of downtown

Cortez Hill - the northeast district of downtown

East Village - the east district of downtown, which is home to Petco Park and the surrounding Ballpark Village

Gaslamp - Quarter, a two- by ten-block nightlife district in central Downtown

Little Italy - the northwest district of downtown

Marina - the southwest district of downtown, which is home to Seaport Village and Pantoja Park

Downtown San Diego encompasses seven thriving neighborhoods, each with its own unique identity.

Tourism is a major industry owing to the city's climate, beaches, and tourist attractions such as Balboa Park, Belmont amusement park, San Diego Zoo, San Diego Zoo Safari Park, and SeaWorld San Diego. As per report, San Diego makes Forbes' travel guide's 14 top destinations of 2019 list. A major highlight for San Diego as it pertains to the list is its rise as an up-and-coming foodie city. San Diego's thriving dining scene is a big draw for foodies who, according to Yelp, rank it the No. 5 U.S. Destination for Food Lovers. With a year-round growing season and plenty of sunshine, San Diego produces a wealth of farm fresh goods. Downtown San Diego is a diverse, vibrant community with roughly 35,000 residents, 80,000 employees who work downtown, 137,000 jobs connected to downtown businesses and millions of year-round visitors. Downtown is a regional employment center, a public transportation hotspot and the number one space for innovation firms and startup growth in the region. The largest age group in downtown is adults in their early 30s. The median age in downtown is 40 years old. Downtown is filled with high-earning professionals. Downtown residents have an average annual income of \$73,756. The majority of residents dine out three or more times a week, with most residents typically visiting restaurants located downtown (80%). Residents reported spending an average of \$10 to \$49 per meal. Downtown San Diego is dominated by

millennials and young professionals. Roughly one third (31%) of downtown's population are millennials. They live, work and play in downtown's coffee houses, restaurants, bars, lounges and alternative work spaces where ideas can be shared and creativity can be nourished over craft cocktails and custom lattes. Sixty-seven percent of residents enjoy nightlife on a regular basis. The majority (90%) frequent concerts, bars and clubs located downtown. Downtown San Diego is home to 113 Zagat rated restaurants and is quickly becoming a national foodie destination. This is yet another element of the millennial attraction to downtown and, in fact, several of downtown's restaurants have caused such a buzz, they are now expanding to other locations both inside and outside of San Diego. Downtown is a public transportation hotspot with more than 25 bus routes, four Rapid bus routes, three trolley lines and nearly 20 miles of bike paths/routes.

Hence in this project, will use the Foursquare APIs to extract the venues of Downtown San Diego neighborhoods to analyze the different neighborhoods, overall Restaurant business, in specific French Restaurant locations and probable neighborhoods where a new French restaurant can be started as specified by our client. Will use the Data Analysis and Machine Learning techniques for accomplishing the given task.

Target Audience - Our client "**XYZ French food chain**", who is interested in opening a new French Restaurant in Downtown San Diego neighborhood, is the target audience for this project.

2. Data set

The data to be used in this project is extracted from below sources

- Foursquare data - It is a local search and discovery service which provides information on different types of entertainment, drinking and dining venues. Foursquare has an API that is used to query their database and find information related to the venues, such as location, overall category, reviews and tips. In this project will use Foursquare API to extract the venues details from Downtown San Diego neighborhoods.
<https://developer.foursquare.com/>
- Downtown San Diego Neighborhood names -
Downtown San Diego has seven neighborhoods i.e. Civic Core, Columbia, Cortez Hill, Gaslamp, Little Italy, Marina and East Village
https://en.wikipedia.org/wiki/List_of_communities_and_neighborhoods_of_San_Diego
<https://www.luxurylivingsd.com/guide/san-diego/>
- Geographic coordinates of Downtown San Diego neighborhoods -
Following links contains the Latitude and Longitude coordinates of Downtown San Diego neighborhoods
<http://sqldbpros.com/2011/11/free-zip-code-city-county-state-csv/>
<http://download.geonames.org/export/dump/>
<https://www.latlong.net/convert-address-to-lat-long.html>

Here are the details of how we will use each data source in our project

2.1. Foursquare API data

For this project we will use the Foursquare Places API. One of the features of this API is to provide a list of venues within a specific location, based on the Latitude and Longitude coordinates and a radius. In order to obtain a list of venues within a specified area, we use the “explore” endpoint from the API. By passing the proper parameters via an HTTP request to the explore endpoint, we get a JSON object with the information shown in the table below

Field	Description
id	A unique string identifier for this venue.
name	The best known name for this venue.
location	An object containing none, some, or all of <code>address</code> (street address), <code>crossStreet</code> , <code>city</code> , <code>state</code> , <code>postalCode</code> , <code>country</code> , <code>lat</code> , <code>lng</code> , and <code>distance</code> . All fields are strings, except for <code>lat</code> , <code>lng</code> , and <code>distance</code> . Distance is measured in meters. Some venues have their locations intentionally hidden for privacy reasons (such as private residences). If this is the case, the parameter <code>isFuzzed</code> will be set to true, and the <code>lat/lng</code> parameters will have reduced precision.
categories	An array, possibly empty, of categories that have been applied to this venue. One of the categories will have a <code>primary</code> field indicating that it is the primary category for the venue. For the complete category tree, see categories .

The location object contains the coordinates of each venue, which will be used to associate it with its respective neighborhood. The categories array will be used to categorize the neighborhood. Basically, we will count how many venues from all available categories are found on each neighborhood, and then use that information to compare neighborhoods

2.2. Downtown San Diego Neighborhood names and coordinates

Downtown San Diego has following seven neighborhoods i.e. Civic Core, Columbia, Cortez Hill, Gaslamp, Little Italy, Marina and East Village



Which are extracted from following links

https://en.wikipedia.org/wiki/List_of_communities_and_neighborhoods_of_San_Diego

<https://www.luxurylivingsd.com/guide/san-diego/>

Now to extract the Latitude and Longitude coordinates of these neighborhoods, will take help of following links where this info is present

<http://sqldbpros.com/2011/11/free-zip-code-city-county-state-csv/>

<http://download.geonames.org/export/dump/>

<https://www.latlong.net/convert-address-to-lat-long.html>

After extracting both the neighborhood names and its location coordinates, they are saved in below table(in csv format)

Borough	Neighborhood	Latitude	Longitude	City
Downtown SanDiego	CIVIC CORE	32.7246	-117.1575	San Diego
Downtown SanDiego	COLUMBIA	32.7182	-117.1632	San Diego
Downtown SanDiego	CORTEZ HILL	32.7222	-117.1574	San Diego
Downtown SanDiego	GASLAMP	32.7114	-117.1599	San Diego
Downtown SanDiego	LITTLE ITALY	32.7241	-117.1684	San Diego
Downtown SanDiego	MARINA	32.7116	-117.1691	San Diego
Downtown SanDiego	EAST VILLAGE	32.7137	-117.1538	San Diego

So will be using the above location coordinates in Foursquare API to get the list of venues in each of the Downtown San Diego neighborhoods.