

Opening a restaurant or bar in New Orleans

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1 Introduction

1.1 Background

New Orleans is a city (population 390,845 in 2019) located at the mouth of the Mississippi river on the central gulf coast. One of the city's foremost industries is tourism, with nearly 20 million visitors spending over \$10 billion USD in the city in 2019. Prior to the COVID-19 pandemic, the tourism industry had experienced year-over-year growth for over a decade. Since March 2020, however, many New Orleans restaurants and bars have been forced to close due in part to federal and local government restrictions on travel and indoor gatherings. As more of the world becomes vaccinated against COVID-19, these recent closures present a unique opportunity for prospective restaurateurs and bar owners to establish a foothold in one of the premier tourism cities in the United States.

1.2 Problem

In this project, we explore the neighborhoods in New Orleans in which to open a new restaurant or bar by identifying those neighborhoods which are similar to the very popular French Quarter in downtown New Orleans.

1.3 Interest

The target audience for this report is any potential business owner who is unfamiliar with the city who may have interest in opening a restaurant or bar in New Orleans.

2 Data acquisition and cleaning

2.1 Data sources

To address the problem in question we utilized the following data:

- A list of neighborhoods of New Orleans, along with their latitudes and longitudes, from Wikipedia: https://en.wikipedia.org/wiki/Neighborhoods_in_New_Orleans
- Calls to the Foursquare API to retrieve a list of venues close to the center of a given neighborhood.

- A call to the OpenStreetMap Nominatim geocoding service to find the central coordinates of the city of New Orleans.

2.2 Data cleaning

We first scrape the Wikipedia page above to find the latitudes and longitudes of the centers of each neighborhood in New Orleans. Given these latitudes and longitudes, we make calls to the Foursquare API to find the data for the (at most) 100 nearest venues to the center of a given neighborhoods; an example five rows of such data are shown below:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	U.S. NAVAL BASE	29.946085	-90.026093	The Mighty Mississippi	29.949695	-90.023710	Boat or Ferry
1	ALGIERS POINT	29.952462	-90.051606	Tout de Suite Café	29.952121	-90.051090	Café
2	ALGIERS POINT	29.952462	-90.051606	Congregation Coffee Roasters	29.951918	-90.053395	Coffee Shop
3	ALGIERS POINT	29.952462	-90.051606	The Crown & Anchor	29.951416	-90.054220	Bar
4	ALGIERS POINT	29.952462	-90.051606	Old Point Bar	29.954940	-90.050226	Bar

Figure 1: A snapshot of the data, including the neighborhood, coordinates, venue, and venue categories of five sample venues.

2.3 Feature selection

We will cluster neighborhoods by examining frequencies of given “Venue Categories” in given neighborhoods as pulled from the Foursquare API; this information will be encoded in OneHot format.