
Recommending the best location for opening a restaurant in Washington DC

Pamal Meyana

December 24, 2020



Introduction

Background

Washington DC, being nation's capital attracts tourists from all over the world. There are several events that brings thousands of people every year to the city. My client "QuickBites" plans to open a fast food restaurant in DC. They have a unique business model where all the menu items are ordered to go, and the customers can either use the dining space available in the restaurant or take the food to go. They are looking to open a new branch in the heart of Washington DC and would like to know the most popular location for restaurants in DC, where most people have checked-in and dined.

Objective

There are several popular restaurants in DC and there is no data readily available that provides the information on a popular location among tourists for restaurants. This project's goal is to collect the location information from USPS or similar Geodata provider and use the crowdsourced venue information from Foursquare to generate a popularity index and recommend the popular locations for opening a new restaurants.

Data Acquisition and Cleaning

Data Sources

The postal codes and corresponding latitude/longitude information is fetched from Opendatasoft, a French company that offers data sharing

software. The API provides United States postal codes and lat/long in a JSON response. This data is saved into a “washington_dc_zip” local JSON file for processing.

	city	zip	long	lat
0	Washington	20210	-77.014647	38.893311
1	Washington	20202	-77.014647	38.893311
2	Washington	20537	-77.025133	38.894097
3	Washington	20068	-77.014647	38.893311
4	Washington	20076	-77.014647	38.893311

The Places API from Foursquare is used to fetch the popular venue information within a 500 meter radius. The API returns a JSON response which includes, venue name, category, venue lat/long etc. Information from the two data sources are merged into a single Pandas data frame for statistical analysis and processing.

	zip	zip latitude	zip longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	20065	38.883412	-77.028198	ARTECHOUSE	38.884299	-77.029266	Art Gallery
1	20065	38.883412	-77.028198	Mandarin Oriental, Washington DC	38.883659	-77.030319	Hotel
2	20065	38.883412	-77.028198	International Spy Museum	38.883895	-77.025539	Museum
3	20065	38.883412	-77.028198	Maine Avenue Fish Market	38.881145	-77.028118	Fish Market
4	20065	38.883412	-77.028198	Falafel Inc	38.881443	-77.027500	Falafel Restaurant