

Capstone Project

The Battle of Neighborhoods - Week 1

Applied Data Science Capstone by IBM / Coursera

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Introduction: Business Problem

In this project we will try to find an optimal location for a coffee shop. Specifically, this report will be targeted to stakeholders interested in opening an **coffee shop** near to **Downtown Miami**, in Florida.

Since there are lots of cafes in Downtown Miami, we will try to detect **the most suitable location, in or around the surrounding neighborhoods**, where the business can thrive. We are also particularly interested in **areas with popular venues or businesses to attract potential customers**.

We will use our data science skills to evaluate a few of the most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

Data

Based on definition of our problem, factors that will influence our decision are:

- the distance of neighborhood from the Downtown area
- number of coffee shops in the neighborhood
- number of possible supporting business areas and popular venues in the neighborhood, if any.

This information will be key in developing our analytical model and will be sufficient to obtain our solution. To gather this information the following data sources will be used:

- A Wikipedia entry with a list of neighborhoods in Miami. The web page consists of the neighborhoods and also their geographical coordinate data. This data will be scrapped, formatted and cleaned to be utilized in our analysis.
https://en.wikipedia.org/wiki/List_of_neighborhoods_in_Miami
- To investigate the competitive environment in each neighborhood, such as existing coffee shops and other businesses or general places of interest. This data will be retrieved using the **Foursquare API**. Foursquare claims to be the most trusted, independent location data and technology platform for businesses.

Sample of Wikipedia List of Neighborhoods in Miami data

	Neighborhood	Population2010	Population/Km²	Latitude	Longitude
0	Brickell	31759	14541	25.758	-80.193
1	Downtown	71,000 (13,635 CBD only)	10613	25.774	-80.193
2	Little Havana	76163	8423	25.773	-80.215
3	Lummas Park	3027	3680	25.777	-80.201
4	Overtown	6736	3405	25.787	-80.201
5	Park West	4655	3635	25.785	-80.193
6	The Roads	7327	4899	25.756	-80.207

Sample of Foursquare API data for List of Venues

location.address	location.lat	location.lng	location.neighborhood	name
1451 Brickell Ave	25.758121	-80.192405	Brickell	Echo Brickell
1501 Brickell Ave	25.757828	-80.192876	Brickell	St. Jude's Catholic Church
1450 Brickell Ave	25.758584	-80.192926	Brickell	1450 Brickell Ave
NaN	25.758211	-80.193154	Brickell	Google Miami
1450 Brickell Ave	25.758583	-80.192805	Brickell	City National Bank
185 SE 14th Ter	25.759420	-80.190957	Brickell	Fortune House Hotel
1451 Brickell Avenue	25.758066	-80.192415	Brickell	JOE & THE JUICE
NaN	25.761573	-80.198373	Brickell	Haitian Consulate

Sample of Foursquare API data for List of Coffee Shops

location.address	location.neighborhood	location.lat	location.lng	name
1541 Brickell Ave	Brickell	25.757370	-80.193590	Mercon Coffee
1200 Brickell Bay Dr	Brickell	25.761971	-80.190529	Finca's Coffee
299 Se 3rd St	Downtown	25.772535	-80.190724	Allegro Coffee Company
117 SE 2nd Ave	Downtown	25.772994	-80.190179	Eternity Coffee Roasters
2 W Flagler St	Downtown	25.773989	-80.193687	Bistro Coffee
145 E Flagler St	Downtown	25.774293	-80.190945	Ever Coffee
444 Brickell Ave	Downtown	25.769225	-80.190680	Coffee To Go
1 SE 3rd Ave	Downtown	25.774260	-80.189000	Q Coffee Club
16 NE 3rd Ave	Downtown	25.774416	-80.188576	Panini Coffee Bar
200 NW 1st Ave	Downtown	25.777711	-80.195711	Parliament Coffee
110 SE 3rd Ave	Downtown	25.773300	-80.189060	Starbucks