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Exploring the Neighborhoods of New Orleans

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Applied Data Science Capstone Project

Introduction

- ▶ New Orleans = lots of bars, restaurants, shopping, hotels!!
- ▶ Students and Visitors would benefit from knowing which neighborhood to visit and/or live, given all the distractions
- ▶ Yoga has amazing health benefits for both students and health conscious individuals
- ▶ Data on the frequency of yoga studios across the different neighborhoods

Data Description

- ▶ Scraped data from https://en.wikipedia.org/wiki/Neighborhoods_in_New_Orleans for all neighborhoods in New Orleans corresponding latitude, longitude by using BeautifulSoup
- ▶ Foursquare API for making calls on nearby venues
- ▶ Python libraries geopy, folium, pandas, and matplotlib installed to create dataframes, get geospatial data, and generate maps

Methodology

1. Create the Dataset for New Orleans map and neighborhood markers using scraped data from wikipedia
2. Create Map of New Orleans using geocoder Nominatim, and Folium
3. Used Foursquare API to collect data on up to 100 venues in French Quarter with starting radius of 500 m
4. Analysis of neighborhoods according to frequency of venue types with reporting of most common types using pandas dataframe
5. Neighborhoods with the most venue types analyzed for highest frequency venue
6. Neighborhoods with highest concentration of yoga studios identified and compared

Results

- ▶ Map of New Orleans successfully created with overlay of markers showing labeled neighborhood locations
- ▶ Dataframe of French Quarter venues called by Foursquare API - 24 venues identified, but this changed to 67 when radius increased to 600m and 100 when increased to 700m. When $r=200$, results did not change. Total of 898 venues across New Orleans identified.
- ▶ After neighborhoods grouped, 197 unique categories were identified across 67 New Orleans neighborhoods (five neighborhoods with no venues).
- ▶ The top neighborhoods with highest concentration of yoga studios in descending order: Leonidas, Mid-City, E. Riverside, Uptown, Touro, and Freret

Map of New Orleans

72 Neighborhoods mapped - see code on next slide



New Orleans Map Python code

```
map_neworleans = folium.Map(location=[29.9499323, -90.0701156], zoom_start=12, control_scale=True)
```

- ▶ # add markers to map
- ▶ for neighborhood, lat, lng in zip(neworleans_df['Neighborhood'], neworleans_df['Latitude'], neworleans_df['Longitude']):
- ▶ label = '{}'.format(neighborhood)
- ▶ label = folium.Popup(label, parse_html=True)
- ▶ folium.CircleMarker(
 - ▶ [lat, lng],
 - ▶ radius=5,
 - ▶ popup=label,
 - ▶ color='blue',
 - ▶ fill=True,
 - ▶ fill_color='#3186cc',
 - ▶ fill_opacity=0.7,
 - ▶ parse_html=False).add_to(map_neworleans)

French Quarter venues called by Foursquare

name	categories	lat	lng	
0	The Black Penny	Bar	29.960487	-90.068411
1	Backatown Coffee Parlour	Coffee Shop	29.958285	-90.071674
2	Jewel Of The South	Cocktail Bar	29.958538	-90.069523
3	FreeWheelin' Bike Tours	Bike Rental / Bike Share	29.957256	-90.069913
4	Congo Square	Park	29.961154	-90.068402
5	Voodoo Bar	Bar	29.960942	-90.067971
6	Homewood Suites by Hilton	Hotel	29.957701	-90.071181
7	Basin Street Station	History Museum	29.959840	-90.070626
8	Bayona	New American Restaurant	29.957371	-90.068115
9	Three Legged Dog Tavern	Bar	29.957501	-90.069514
10	Broussard's Restaurant & Courtyard	Cajun / Creole Restaurant	29.956802	-90.068033
11	Saenger Theatre	Performing Arts Venue	29.956432	-90.072603
12	Mahalia Jackson Theater for the Performing Arts	Performing Arts Venue	29.962846	-90.069050
13	Vacherie Cafe	Café	29.958415	-90.067066
14	Arnaud's French 75 Bar	Cocktail Bar	29.955750	-90.068885
15	Louis Armstrong Park	Park	29.962798	-90.067956
16	Maison Bourbon	Jazz Club	29.958565	-90.065723
17	GW Fins	Seafood Restaurant	29.955609	-90.068890
18	Preservation Hall	Jazz Club	29.958290	-90.065395
19	Musical Legends Park	Music Venue	29.955780	-90.068320
20	Courtyard by Marriott New Orleans French Quart...	Hotel	29.955405	-90.070382
21	Bourbon Street	Road	29.958397	-90.065848
22	Fritzel's European Jazz Pub	Jazz Club	29.959238	-90.065103
23	Oceana Grill	Cajun / Creole Restaurant	29.956252	-90.067585

What do the most popular neighborhoods have to offer most?

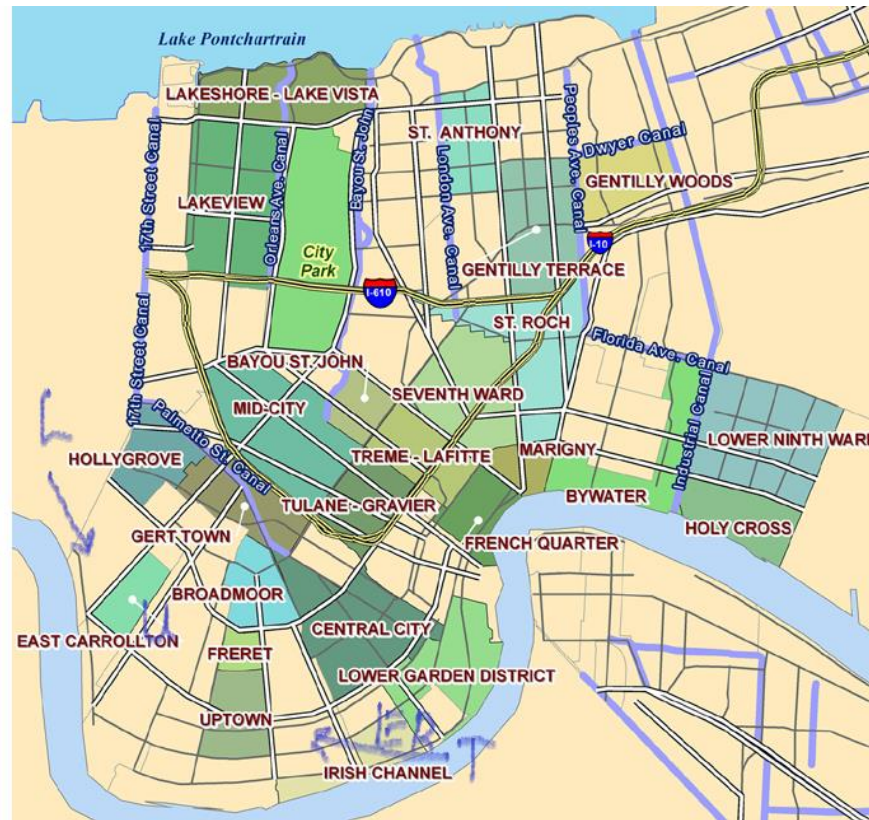
- ▶ Central Business District - Hotels
- ▶ French Quarter - Bars
- ▶ Marigny - Hotels
- ▶ Garden District - Bars
- ▶ Freret - Pizza Places
- ▶ Touro - Hotels

Students - BEWARE! This is a tourist town.

Discussion

- ▶ New Orleans is a vibrant city with many bars, hotels, and restaurants for visitors and students alike.
- ▶ Next Steps:
 - ▶ Is the relationship between radius search and venue size linear or exponential in the French Quarter? What is the relationship? How does that compare to other tourist cities?
 - ▶ Do yoga studios closer to bodies of water get more business?
 - ▶ Do students attending Universities near neighborhoods that have few to no yoga studios report more health issues?

Neighborhoods of New Orleans



Acknowledgements and Disclaimers

- ▶ Author is NOT an experienced coder.
- ▶ Data methodology section heavily borrowed from Lab Assignments
- ▶ Would like to thank the instructors and fellow classmates for their feedback to my questions in the discussion forums

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THANK YOU!!

Feedback is Welcomed