Hospitality and Food Industry Data Analysis for New Orleans

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Business Problem and Significance

- Analyzing locational data of hospitality/dining venues is important to address stakeholders like business owners of those services or potential customers

- New Orleans is one of the busiest US cities in terms of tourism and dining

- New Orleans is a top 3 place to visit for their acclaimed food by Travel + Leisure

Data Scraping and Cleaning

	Neighborhood	Longitude	Latitude
0	U.S. NAVAL BASE	-90.026093	29.946085
1	ALGIERS POINT	-90.051606	29.952462
2	WHITNEY	-90.042357	29.947200
3	AUDUBON	-90.121450	29.932994
4	OLD AURORA	-90.000000	29.924440

Scraped from Wikipedia page:

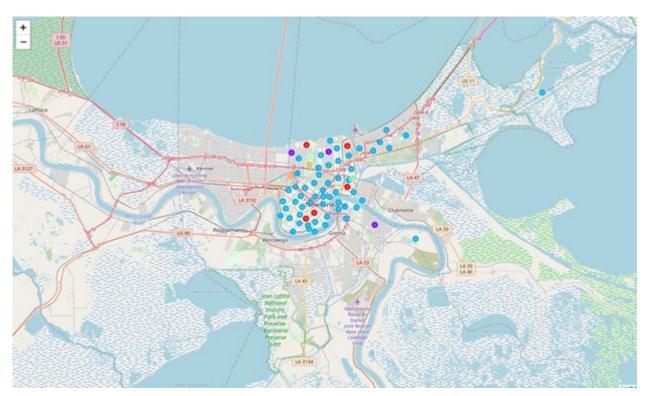https://en.wikipedia.org/wiki/Neighborhoods_in_New_Orleans

Data Cleaning Cont'd

Identify key venues correlated with the hospitality, dining, and tourism industry that could be further used to analyze the clusters

K Means Clustering

Use K Means Clustering Algorithm due to its robustness and easy implementation

Use a K=5 cluster to set five groups to group upon

Cluster 0

Cluster 0 - RED

`NO_merged.loc[NO_merged['Cluster Labels'] == 0, NO_merged.columns[list(range(9))]]`

	Neighborhood	Longitude	Latitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
12	ST. CLAUDE	-90.039268	29.971814	0	Plaza	Park	Wings Joint	Japanese Restaurant	Ethiopian Restaurant
15	CENTRAL CITY	-90.086689	29.939465	0	Park	Fried Chicken Joint	Seafood Restaurant	Cajun / Creole Restaurant	Grocery Store
25	MILAN	-90.098362	29.932548	0	Wine Shop	Dive Bar	Park	Theater	Wings Joint
44	LAKESHORE - LAKE VISTA	-90.097847	30.023253	0	Harbor / Marina	Park	Wings Joint	General Entertainment	Ethiopian Restaurant
51	PONTCHARTRAIN PARK	-90.039310	30.021989	0	Park	Wings Joint	General Entertainment	Ethiopian Restaurant	Farmers Market

Cluster 1

Cluster 1 - PURPLE ¶

```python
NO_merged.loc[NO_merged['Cluster Labels'] == 1, NO_merged.columns[list(range(9))]]
```

	Neighborhood	Longitude	Latitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
4	OLD AURORA	-90.000000	29.924440	1	Concert Hall	Playground	Wings Joint	Donut Shop	Ethiopian Restaurant
43	WEST END	-90.118618	30.013666	1	Playground	Wings Joint	General Entertainment	Ethiopian Restaurant	Farmers Market
48	ST. ANTHONY	-90.065746	30.015152	1	Playground	Wings Joint	General Entertainment	Ethiopian Restaurant	Farmers Market

Cluster 2

Cluster 2 - BLUE

```
print(NO_merged.loc[NO_merged['Cluster Labels'] == 2, NO_merged.columns[list(range(9))]].shape)
NO_merged.loc[NO_merged['Cluster Labels'] == 2, NO_merged.columns[list(range(9))]]
```

(56, 9)

	Neighborhood	Longitude	Latitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	U.S. NAVAL BASE	-90.026093	29.946085	2	Wings Joint	Gift Shop	Ethiopian Restaurant	Farmers Market	Fast Food Restaurant
1	ALGIERS POINT	-90.051606	29.952462	2	Bar	Wings Joint	Scenic Lookout	New American Restaurant	Café
2	WHITNEY	-90.042357	29.947200	2	Nightclub	Gift Shop	Ethiopian Restaurant	Farmers Market	Fast Food Restaurant
3	AUDUBON	-90.121450	29.932994	2	Park	Plaza	Concert Hall	Playground	Coffee Shop
5	B. W. COOPER	-90.091753	29.951774	2	Recreation Center	Wings Joint	General Entertainment	Eastern European Restaurant	Ethiopian Restaurant
6	BAYOU ST. JOHN	-90.086517	29.976071	2	Sandwich Place	Playground	Other Great Outdoors	Park	Lounge
7	BLACK PEARL	-90.134883	29.935895	2	Farmers Market	Pool	Food Truck	Grocery Store	Wings Joint
8	BROADMOOR	-90.103812	29.946568	2	Recreation Center	Music Venue	Taco Place	Food Truck	Coffee Shop
9	MARLYVILLE - FONTAINEBLEAU	-90.113468	29.953001	2	Bar	Plaza	Food & Drink Shop	Lounge	Nightclub
10	GERT TOWN	-90.105829	29.960289	2	Asian Restaurant	Bakery	Seafood Restaurant	Wings Joint	Food & Drink Shop
11	MID-CITY	-90.099392	29.970401	2	American Restaurant	Bed & Breakfast	Cocktail Bar	Spa	Cajun / Creole Restaurant
13	CENTRAL BUSINESS DISTRICT	-90.074458	29.950026	2	Hotel	Hotel Bar	Coffee Shop	Bar	Sandwich Place
14	FRENCH QUARTER	-90.064373	29.958839	2	Cajun / Creole Restaurant	Bar	Jazz Club	Hotel	Breakfast Spot
16	LAKE CATHERINE	-89.761047	30.088108	2	Wings Joint	Gift Shop	Ethiopian Restaurant	Farmers Market	Fast Food Restaurant

Cluster 3

Cluster 3 - GREEN ¶

```
NO_merged.loc[NO_merged['Cluster Labels'] == 3, NO_merged.columns[list(range(9))]]
```

	Neighborhood	Longitude	Latitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
56	FLORIDA DEV	-90.03253	29.981702	3	Wings Joint	Gift Shop	Ethiopian Restaurant	Farmers Market	Fast Food Restaurant

Cluster 4

Cluster 4 - ORANGE

```
NO_merged.loc[NO_merged['Cluster Labels'] == 4, NO_merged.columns[list(range(9))]]
```

	Neighborhood	Longitude	Latitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
39	LAKEWOOD	-90.119991	29.985494	4	Baseball Field	Spa	Wings Joint	General Entertainment	Ethiopian Restaurant
41	CITY PARK	-90.093727	29.999172	4	Baseball Field	Park	Tennis Court	Wings Joint	Food & Drink Shop

Conclusion and Next Steps

- More of the social attractions like bars, clubs, and parks were located more inland and a great place for aspiring owners to prop up their venues

- As for more dining and especially of Creole/Haitian type, they were more likely to be found along the shores and in the non-blue clusters.

- Moving forward more analysis can be done on possibly reviews of said tourist and restaurant attractions to get a better sense of optimal locations for touring, dining, or having fun for both owners and customers.