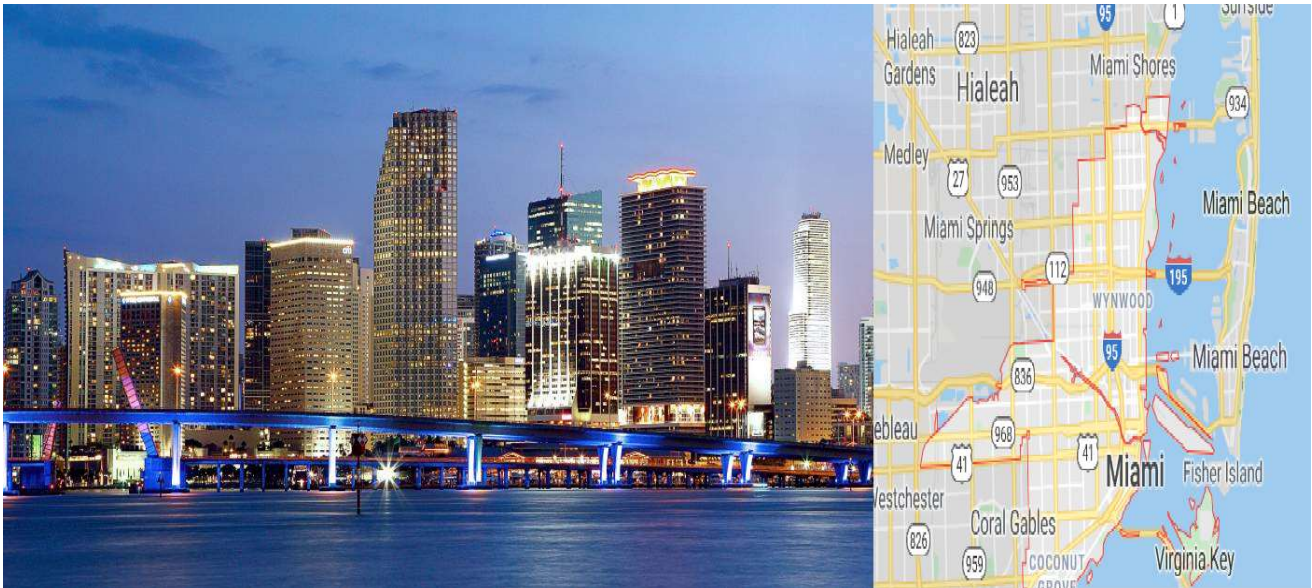


Miami Neighborhood Analysis to setup a Restaurant



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Introduction

Miami is the cultural, economic and financial center of South Florida in the United States. Miami is the sixth most densely populated major city in the United States .The Miami metropolitan area is home to 6.1 million people, the second-most populous in the southeastern United States and the seventh-largest in the nation. The city has the third tallest skyline in the U.S.

Miami is a major center and leader in finance, commerce, culture, media, entertainment, the arts, and international trade.The metro area is by far the largest urban economy in Florida and the 12th largest in the United States. Miami was ranked seventh in the United States and 31st among global cities in terms of business activity, human capital, information exchange, cultural experience, and political engagement. According to a UBS study of 77 world cities, the city was ranked as the third-richest in the United States and the eighth-richest in the world in terms of purchasing power.

Greater Downtown Miami has one of the largest concentrations of international banks in the United States, and is home to many large national and international companies. The Health District is a major center for hospitals, clinics, and the biotechnology and medical research industries. PortMiami is the busiest cruise port in the world in both passenger traffic and cruise lines, and refers to itself as the "Cruise Capital of the World".Miami is also a major tourism hub for international visitors, ranking second in the country after New York City.

Problem Statement

As Miami is one of the richest metropolitan city in United States , A Company “ABC” wants to setup a restaurant in Miami. They want to find a best suitable place to setup a restaurant. They need below details about the Miami

- What are the different Neighborhood
- How the population in each neighborhood
- What are the different venues currently available in each neighborhood
- Group the similar neighborhood based on the Venues .

If Company has the above details, it will help them in identifying the suitable place to setup the Restaurant

Data used for the Analysis

To find the details mentioned in the problem statement, below data source being used.

- Data from Wikipedia .

Url: https://en.wikipedia.org/wiki/List_of_neighborhoods_in_Miami

using the above URL ,below data is extracted

| | Neighborhood | Population2010 | Population/Km² | latitude | longitude |
|----|-------------------------------|----------------|----------------|----------|-----------|
| 0 | Allapattah | 54289 | 4,401 | 25.815 | -80.224 |
| 1 | Arts & Entertainment District | 11033 | 7,948 | 25.799 | -80.190 |
| 2 | Brickell | 31759 | 14,541 | 25.758 | -80.193 |
| 3 | Buena Vista | 9058 | 3,540 | 25.813 | -80.192 |
| 4 | Coconut Grove | 20076 | 3,091 | 25.712 | -80.257 |
| 5 | Coral Way | 35062 | 4,496 | 25.750 | -80.283 |
| 6 | Design District | 3573 | 3,623 | 25.813 | -80.193 |
| 7 | Edgewater | 15005 | 6,675 | 25.802 | -80.190 |
| 8 | Flagami | 50834 | 5,665 | 25.762 | -80.316 |
| 9 | Grapeland Heights | 14004 | 4,130 | 25.792 | -80.258 |
| 11 | Liberty City | 19725 | 3,733 | 25.832 | -80.225 |
| 12 | Little Havana | 76163 | 8,423 | 25.773 | -80.215 |
| 13 | Lummus Park | 3027 | 3,680 | 25.777 | -80.201 |
| 14 | Overtown | 6736 | 3,405 | 25.787 | -80.201 |
| 15 | Park West | 4655 | 3,635 | 25.785 | -80.193 |
| 16 | The Roads | 7327 | 4,899 | 25.756 | -80.207 |
| 17 | Virginia Key | 14 | - | 25.736 | -80.155 |
| 18 | West Flagler | 31407 | 4,428 | 25.775 | -80.243 |
| 19 | Wynwood | 7277 | 2,983 | 25.804 | -80.199 |

- Venue details from the FOURSQUARE API

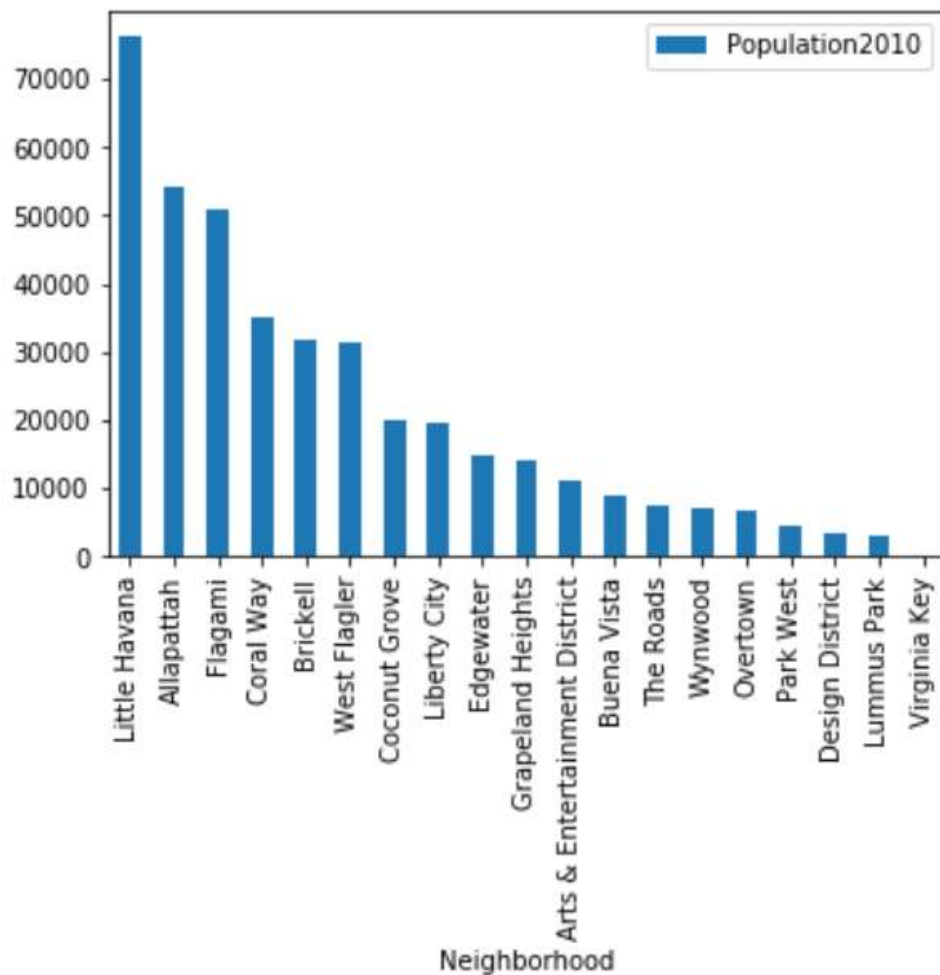
<https://api.foursquare.com/>

Methodology

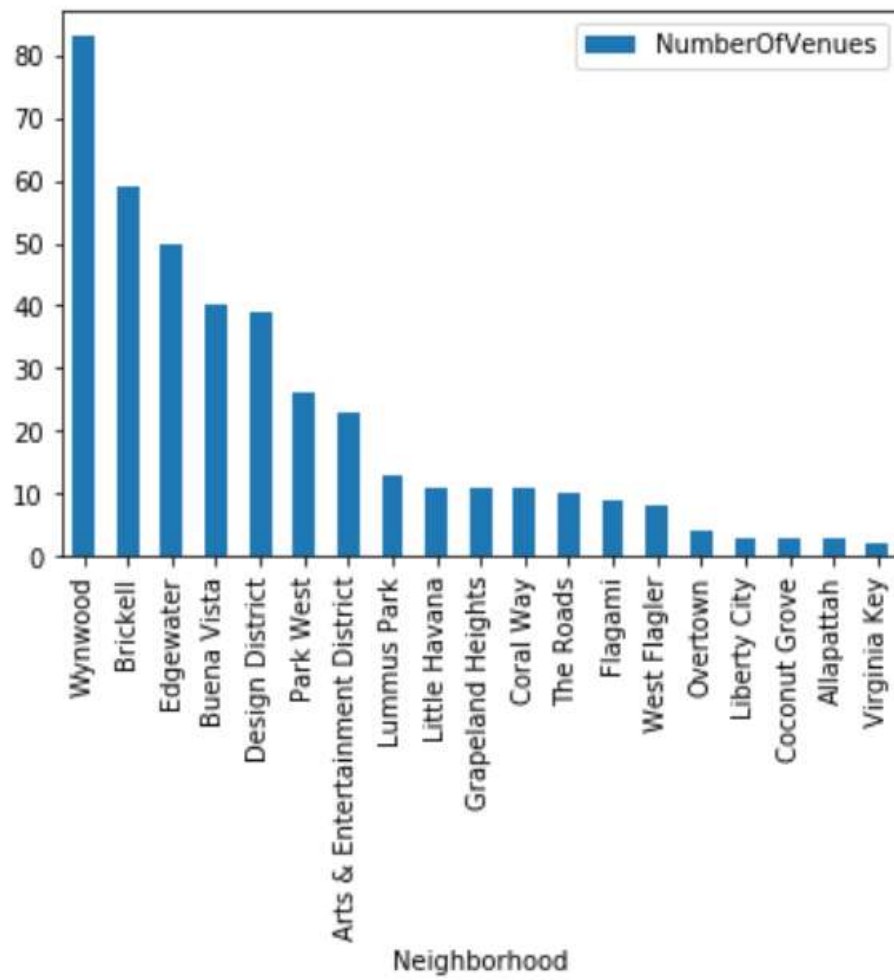
K-Means clustering is used to group the Neighborhoods based on the similarities in the Venues. Also, we have identified the population of each neighborhood and the number of Venues in each neighborhood. this will help to understand happening places in the Miami Neighborhood. This gives very good insight in making the decision on finalizing the best place to setup the Restaurant. In the below sections, We can also see top 5 venue categories for each Neighborhood.

Result

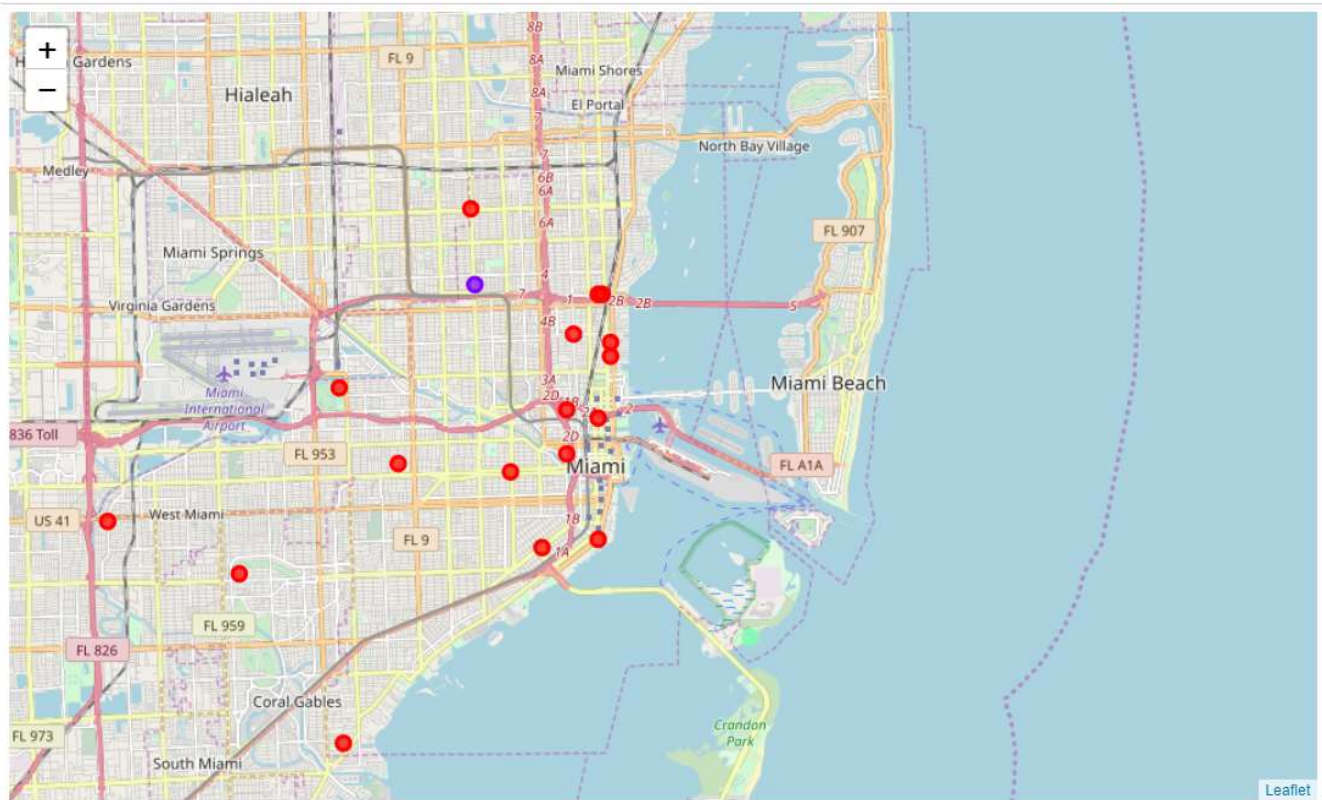
- Population per each Neighborhood



- Total number of Venues per each Neighborhood



- Neighborhood grouped in to 3 clusters based on the similarity in the Venue category



Group 1

Cluster 1

```
In [59]: ▶ d', '1st Most Common Venue', '2nd Most Common Venue', '3rd Most Common Venue', '4th Most Common Venue', '5th Most Common Venue']]
```

Out[59]:

| | Neighborhood | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|-------------------------------|---------------------------|---------------------------------|---------------------------------|---------------------------|-------------------------------|
| 1 | Arts & Entertainment District | Ice Cream Shop | Gym | Restaurant | Coffee Shop | Paper / Office Supplies Store |
| 2 | Brickell | Hotel | Italian Restaurant | Japanese Restaurant | Restaurant | Bank |
| 3 | Buena Vista | Café | Art Museum | Clothing Store | Nightclub | Boutique |
| 4 | Coconut Grove | American Restaurant | Park | Boat or Ferry | Yoga Studio | Dog Run |
| 5 | Coral Way | Liquor Store | Pharmacy | Mobile Phone Shop | Seafood Restaurant | Historic Site |
| 6 | Design District | Café | Art Museum | Clothing Store | Nightclub | Boutique |
| 7 | Edgewater | Restaurant | Sandwich Place | Art Gallery | Pizza Place | Peruvian Restaurant |
| 8 | Flagami | Seafood Restaurant | Department Store | Fast Food Restaurant | Peruvian Restaurant | Latin American Restaurant |
| 9 | Grapeland Heights | Gym / Fitness Center | Golf Course | Restaurant | Bar | Bakery |
| 11 | Liberty City | Caribbean Restaurant | Southern / Soul Food Restaurant | Park | Discount Store | Event Space |
| 12 | Little Havana | Latin American Restaurant | Pharmacy | Spanish Restaurant | Mexican Restaurant | Discount Store |
| 13 | Lummas Park | Seafood Restaurant | American Restaurant | Fish Market | Spanish Restaurant | Gym |
| 14 | Overtown | Wings Joint | Farmers Market | Southern / Soul Food Restaurant | Athletics & Sports | Yoga Studio |
| 15 | Park West | Nightclub | Café | Bar | Theater | Pharmacy |
| 16 | The Roads | Lawyer | Health & Beauty Service | Massage Studio | Latin American Restaurant | Moving Target |
| 18 | West Flagler | Cuban Restaurant | Bakery | Pharmacy | Concert Hall | Comfort Food Restaurant |
| 19 | Wynwood | Art Gallery | Bar | Restaurant | Food Truck | Asian Restaurant |

Group 2

Cluster 2

```
In [60]: ▶ cluster_2.loc[:,['Neighborhood','1st Most Common Venue','2nd Most Common Venue','3rd Most Common Venue','4th Most Common Venue','5th Most Common Venue']]
```

Out[60]:

| | Neighborhood | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|---|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 0 | Allapattah | Lounge | Convenience Store | Department Store | Dog Run | Fast Food Restaurant |

Group 3

Cluster 3

```
In [61]: ▶ cluster_3.loc[:,['Neighborhood','1st Most Common Venue','2nd Most Common Venue','3rd Most Common Venue','4th Most Common Venue','5th Most Common Venue']]
```

Out[61]:

| | Neighborhood | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 17 | Virginia Key | Beach | Dive Bar | Fast Food Restaurant | Farmers Market | Event Space |

Conclusion

From the Analysis result , we noticed that Allapattah is having more population. It dont have restaurants as the most common Venue category .

So, Allapattah is the right place to setup new restaurant.