



# A Guide to Barcelona





# Background

- The city of Barcelona is one of the most visited cities in the world.
- For a traveler to the city, it can be difficult to maximize one's time and see the great things the city has to offer.
- In order to provide the best possible experience in the city, we will compare different neighborhoods within the city to determine an optimal vacation.
- A traveler can use the information to determine which neighborhood to stay in based on things like food, shopping, nightlife, and attractions



# Python Libraries

- Pandas
- NumPy
- JSON
- Geopy
- Requests
- Matplotlib
- Sklearn
- Folium
- IPython



# Geospatial Data

- District data was obtained from a JSON file containing latitude and longitude of each district in Barcelona

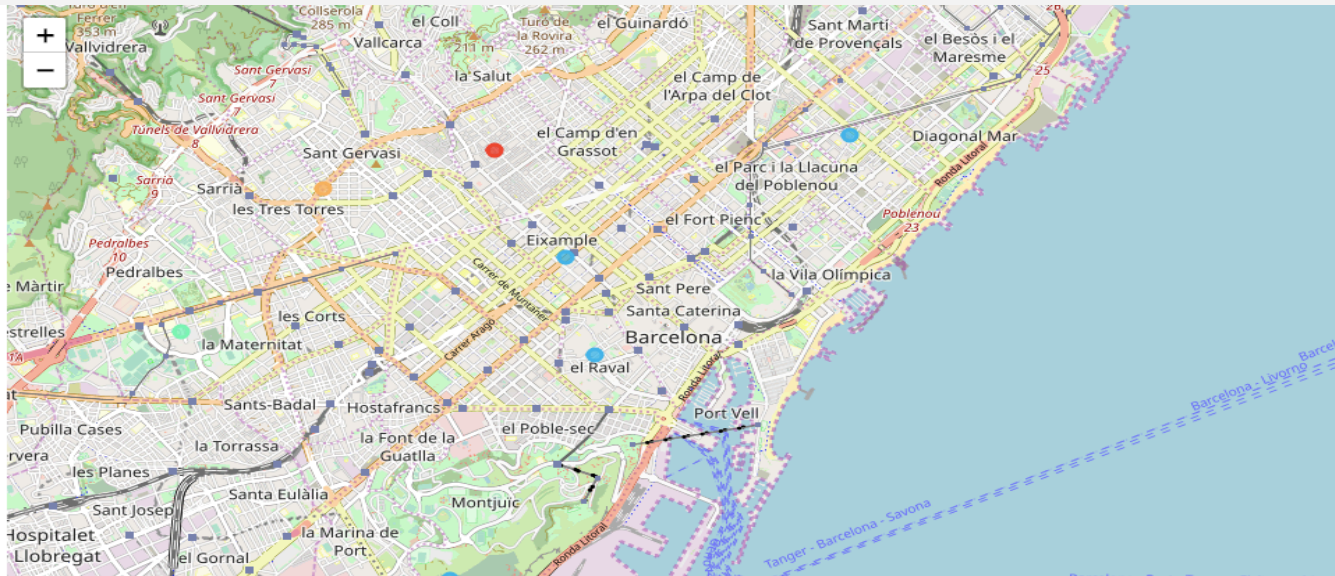
```
▼ root: {} 3 keys
  type: "FeatureCollection"
  ► crs: {} 2 keys
  ▼ features: [] 10 items
    ▼ 0: {} 3 keys
      type: "Feature"
      ▼ properties: {} 11 keys
        C_Distri: "01"
        N_Distri: "Ciutat Vella"
        Homes: 53968
        Dones: 48379
        Area: 4368464.78676
        Perim: 21035.207261
        Coord_X: 431616.77399
        Coord_Y: 4581563.51088
        WEB_1: "http://www.bcn.cat/ciutatvella"
        WEB_2: "http://www.bcn.cat/estadistica/catala/dades/inf/anuari/index.htm"
        WEB_3: "http://www.bcn.cat/estadistica/catala/dades/guiadt01/index.htm"
      ▼ geometry: {} 2 keys
        type: "Polygon"
        ▼ coordinates: [] 1 item
```

Filter...



# Clustering

- K-means clustering was used for each district to view the top venues
- Venue data was obtained from Foursquare





# Example of Cluster

name		1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
5	Gracia	Café	Plaza	Tapas Restaurant	Cocktail Bar	Bar	Asian Restaurant	Ice Cream Shop	Pizza Place	Restaurant	Bookstore



# Conclusion

- Clustering the districts of Barcelona shows how one can obtain information about food, drink, and other unique local venues
- A traveler can use the information to determine where to stay, what to do, and how to make the most out of the wonderful city
- Questions





Thank You

