



The Battle of Neighborhoods

Choosing the Best City to Travel or Live

- ▶ Los Angeles
- ▶ San Francisco
- ▶ Portland
- ▶ Seattle

Introduction: Business Problem

- ▶ **Travelers** want to have a place with more scenic views and hotel choice make their trip priceworthy
- ▶ **Future residents** need a city with the most convenient facilities to make their lives easier
- ▶ Project Objective: help travelers and future residents choose the most suitable city to travel or live

Data Section

Data requirements:

- ▶ Geospatial Coordinate of Los Angeles, San Francisco, Portland and Seattle
- ▶ Nearby venues for travelling purpose and living convenience in each city
 - ▶ Name of Venue
 - ▶ Geospatial Coordinate of Venue
 - ▶ Venue Category
 - ▶ Distance to the coordinate of each city

Data Sources:

- ▶ Nominatim Geolocation Service (user_agent="foursquare_agent")
- ▶ Foursquare API (<https://api.foursquare.com/v2>)

Foursquare API

Developer site:

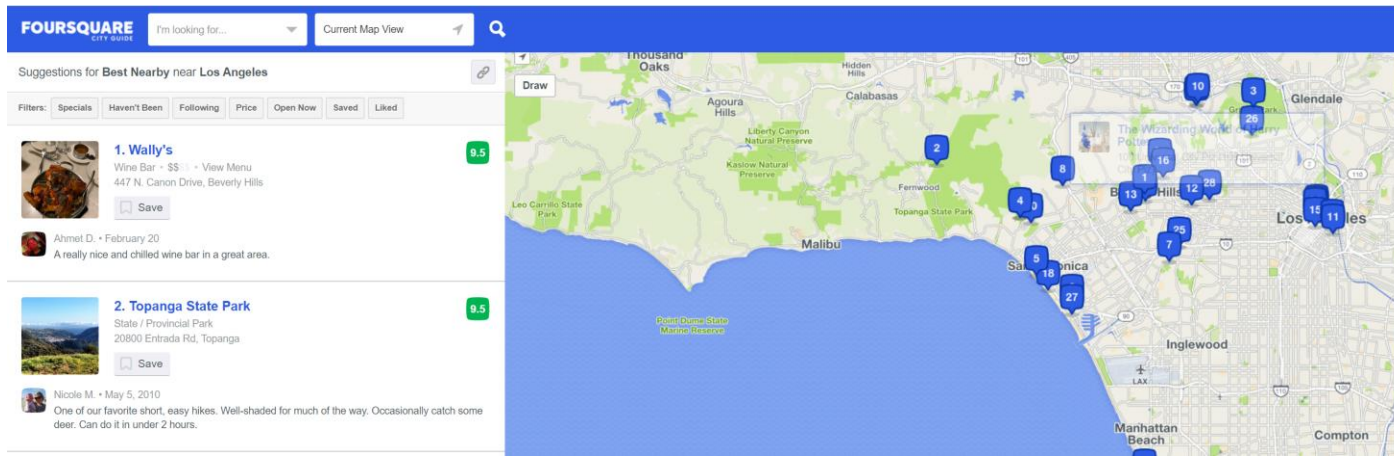
Send url request to get raw JSON data

```
la_url = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={}, {}&radius={}&limit={}'.format(
    CLIENT_ID,
    CLIENT_SECRET,
    VERSION,
    la_latitude,
    la_longitude,
    radius,
    LIMIT)

la_results = requests.get(la_url).json()
```

User site:

Explore the city online



Methodology Section

- ▶ Requested raw JSON data of up to 250 venues by searching a radius of 100 kilometers (62 miles) of each city

```
LIMIT = 250 # Get top 250 venues  
radius = 100000 # Define a radius of 100 kilometers/62 miles
```

- ▶ Implement feature engineering to clean raw JSON data and extract needed features only (i.e.)

	name	categories	lat	lng	distance
0	Walt Disney Concert Hall	Concert Hall	34.055511	-118.249284	634
1	The Broad	Art Museum	34.054474	-118.250051	677
2	The Last Bookstore	Bookstore	34.047620	-118.249852	940
3	Hauser & Wirth	Art Gallery	34.046095	-118.234801	1120
4	Salt & Straw	Ice Cream Shop	34.046065	-118.235473	1083
5	Mr. Speedy Plumbing & Rooter Inc.	Construction & Landscaping	34.042538	-118.233864	1488

Methodology Section

- Used `value_counts()` to group venues by categories

```
la_nearby_venues['categories'].value_counts()
Trail      5
Park       5
Hotel      5
Art Museum 4
Farmers Market 4
Grocery Store 4
Sandwich Place 4
American Restaurant 4
Ice Cream Shop 3
Scenic Lookout 3
Deli / Bodega 3
Yoga Studio 3
Italian Restaurant 3
Coffee Shop 3
Bakery     2
Garden     2
Bookstore  2
Art Gallery 2
Wine Shop  2
Theater    2
```

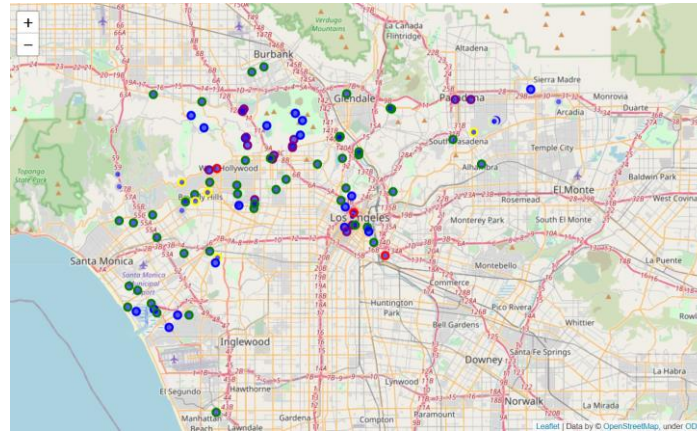
- Manually defined six clusters from resulting categories and count corresponding venues for each cluster in each city

	City	Total Count of Categories	Shopping	Food	Entertainment	Museum	Scenic	Hotel
0	Los Angeles	78	3	40	52	59	73	78
1	San Francisco	70	1	32	43	49	69	70
2	Portland	63	4	44	48	50	62	63
3	Seattle	73	3	40	46	49	71	73

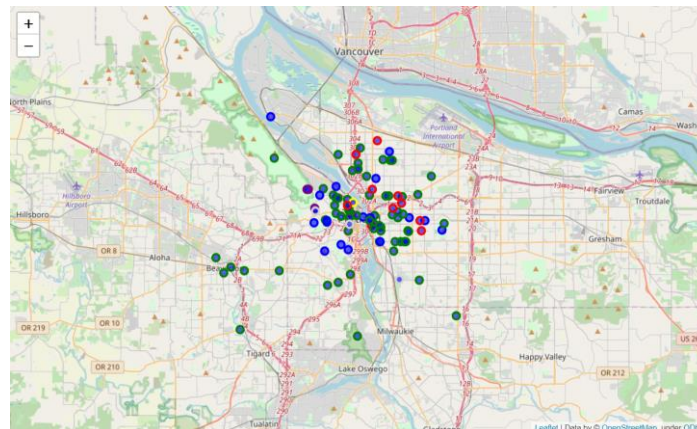
Result Section

► Visualize venues in six major categories on the map of each city

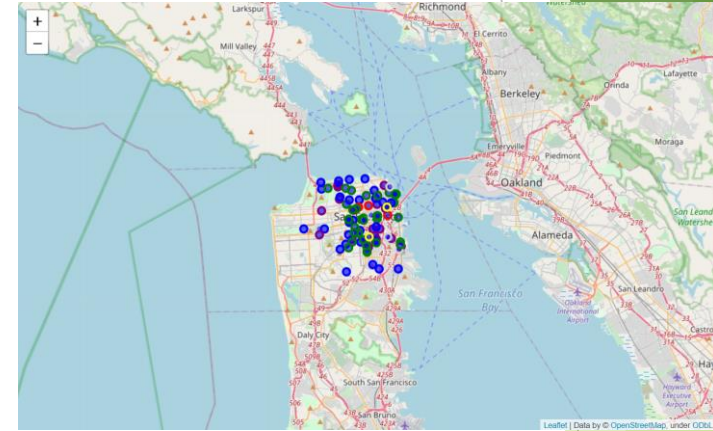
- Shopping: Red
- Food: Green
- Entertainment: Purple
- Museum: Light gray
- Scenic: Blue
- Hotel: Yellow



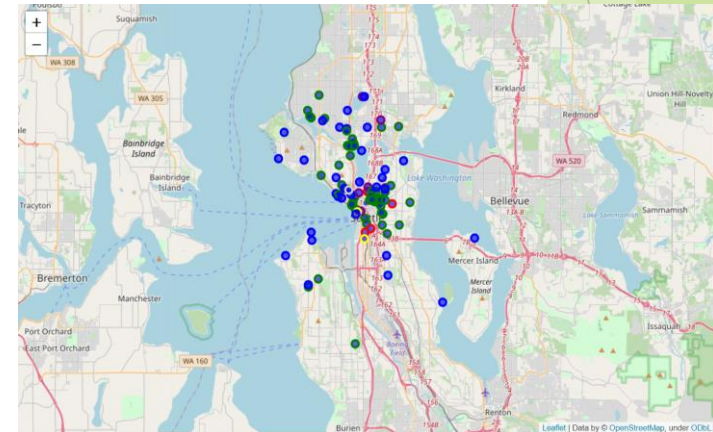
Los Angeles



Portland



San Francisco



Seattle

Discussion Section

Los Angeles: best city to travel

- ▶ Greatest number of scenic spots
- ▶ Most flexible choice of hotels

	City	Total Count of Categories	Shopping	Food	Entertainment	Museum	Scenic	Hotel
0	Los Angeles	78	3	40	52	59	73	78

San Francisco: best city to settle down

- ▶ Considerable numbers of food spots and entertainments spots
- ▶ Densely distributed venues to better life convenience





Conclusion

Travel with Los Angeles
Live in San Francisco