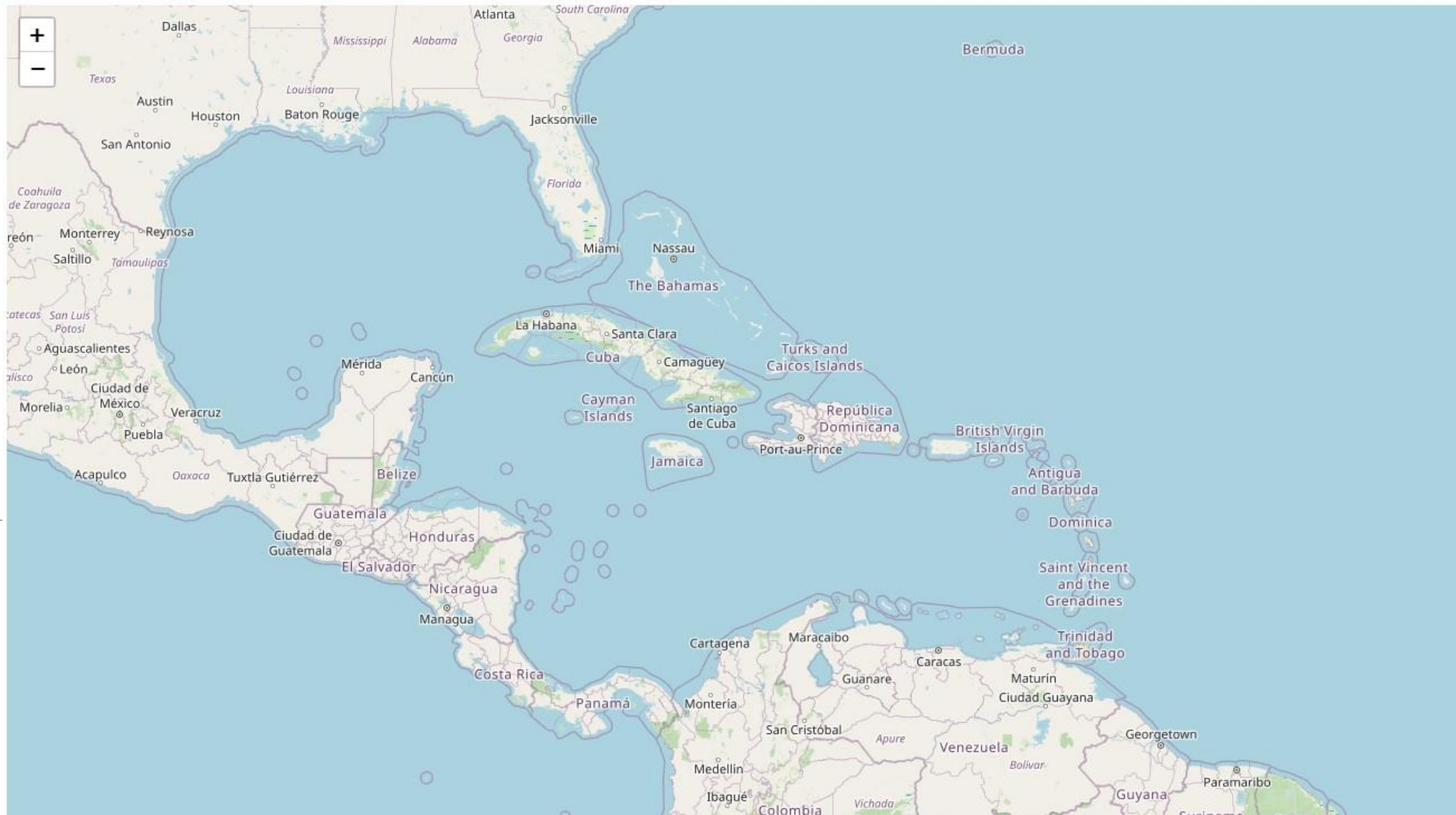


The Caribbean



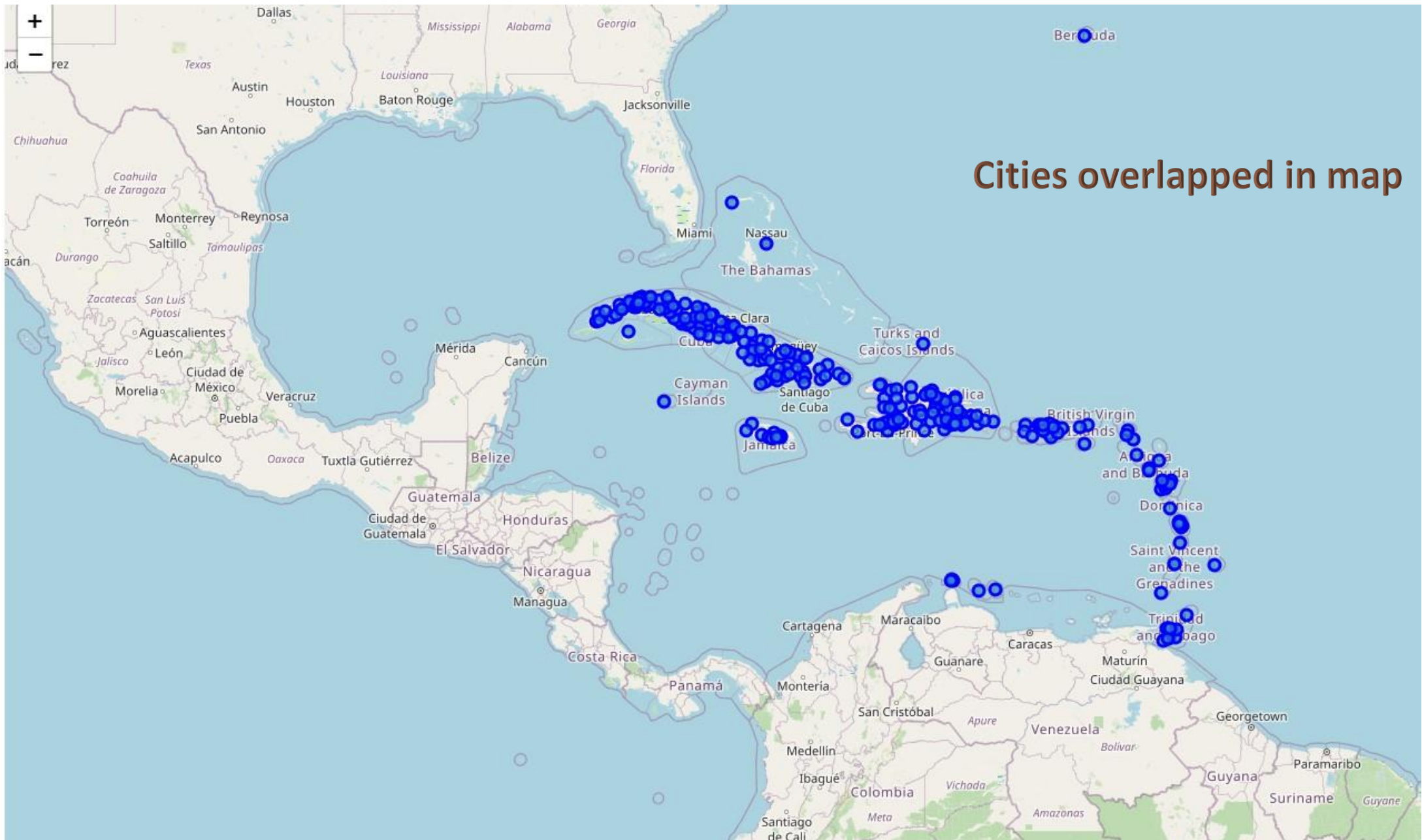
Analyze the various cities along the Caribbean region

- Big region in the America of several countries/territories composed of more than 700 Islands
- Diverse ethnic groups and religions
- Tourism is one of the Caribbean's major economic sectors
- Hard to find one place on the internet that can resume information about this region, similarities and differences between the various zones
- This project is indicated to everyone that is interested in traveling to the Caribbean, as well as to traveling agencies.

Data Acquisition

- Choose 284 cities ranked by population in The Caribbean
- Table with 2 columns: Country and City
- Add, with geopy library, 2 more columns: the latitude and longitude of every city
- Use Foursquare API to get the location in map

	Country	City	Latitude	Longitude
0	Anguilla	The Valley	18.214586	-63.051776
1	Antigua and Barbuda	Saint John's	17.118457	-61.844851
2	Aruba	Angochi	12.520460	-69.964053
3	Aruba	Babijn	12.540947	-69.995816
4	Aruba	Oranjestad	12.526874	-70.035685
5	Bahamas	Freeport	26.535681	-78.695362
6	Bahamas	Nassau	25.078346	-77.338333
7	Barbados	Bridgetown	13.097783	-59.618418
8	Bermuda	Hamilton	32.295608	-64.782705
9	Bonaire	Kralendijk	12.147174	-68.274078



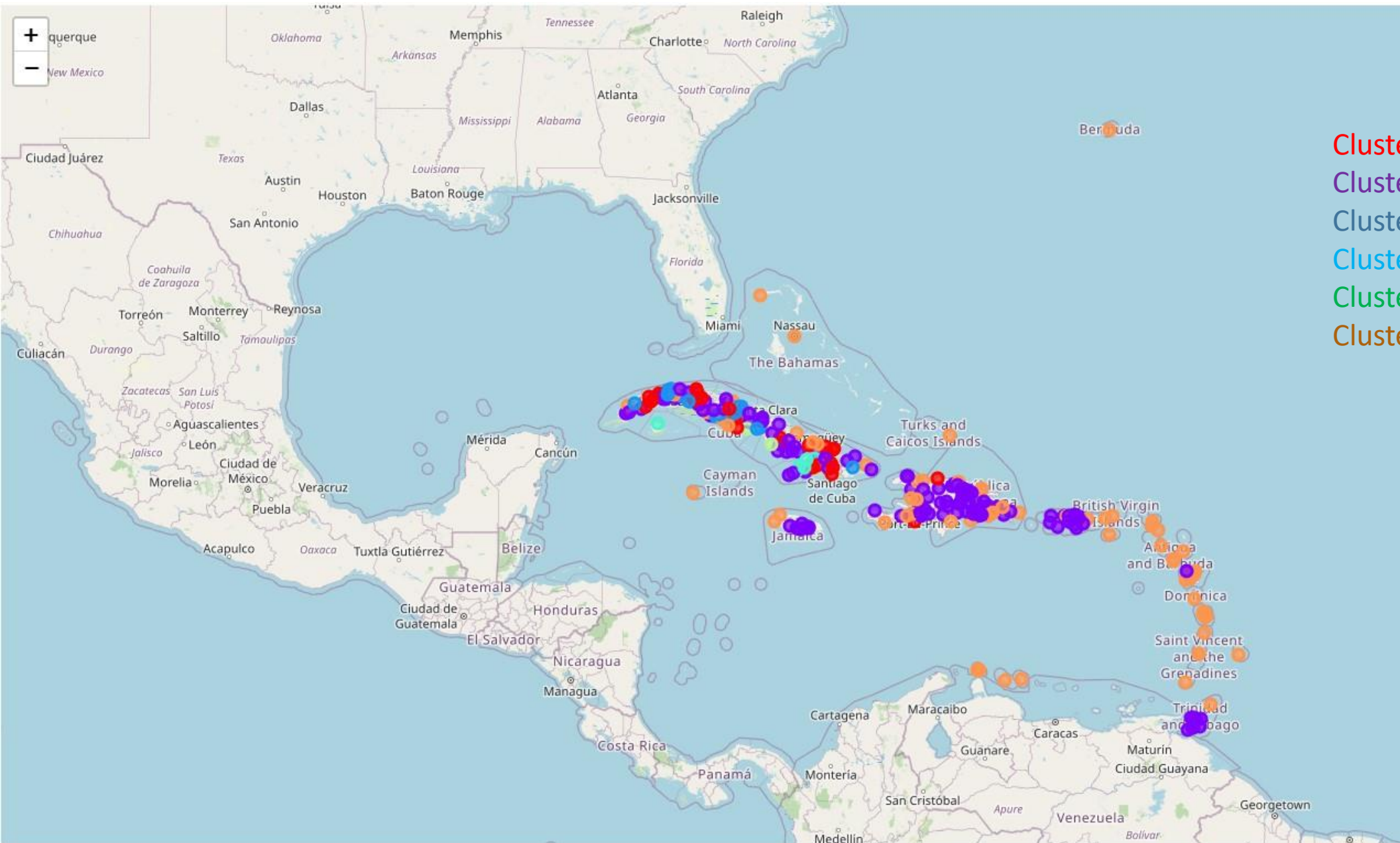
Example of venues obtained for one city, The Valley:

	City	City Latitude	City Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	The Valley	18.214586	-63.051776	Shoal Bay Beach	18.254033	-63.031663	Beach
1	The Valley	18.214586	-63.051776	Veya	18.201734	-63.079456	Caribbean Restaurant
2	The Valley	18.214586	-63.051776	Gwen's Reggae Bar & Grill	18.252853	-63.034531	Caribbean Restaurant
3	The Valley	18.214586	-63.051776	Roy's Bayside Grill	18.197958	-63.091111	Steakhouse
4	The Valley	18.214586	-63.051776	Tasty's	18.196671	-63.084617	Caribbean Restaurant
5	The Valley	18.214586	-63.051776	Sandy Ground Anguilla	18.201715	-63.090445	Beach
6	The Valley	18.214586	-63.051776	Da Vida	18.219870	-63.066997	Caribbean Restaurant
7	The Valley	18.214586	-63.051776	Pumphouse	18.202669	-63.090122	Pub
8	The Valley	18.214586	-63.051776	Jacala	18.184076	-63.135961	French Restaurant
9	The Valley	18.214586	-63.051776	Sun Shine Shack	18.177536	-63.113524	Bar

Classifier *k-means clustering*

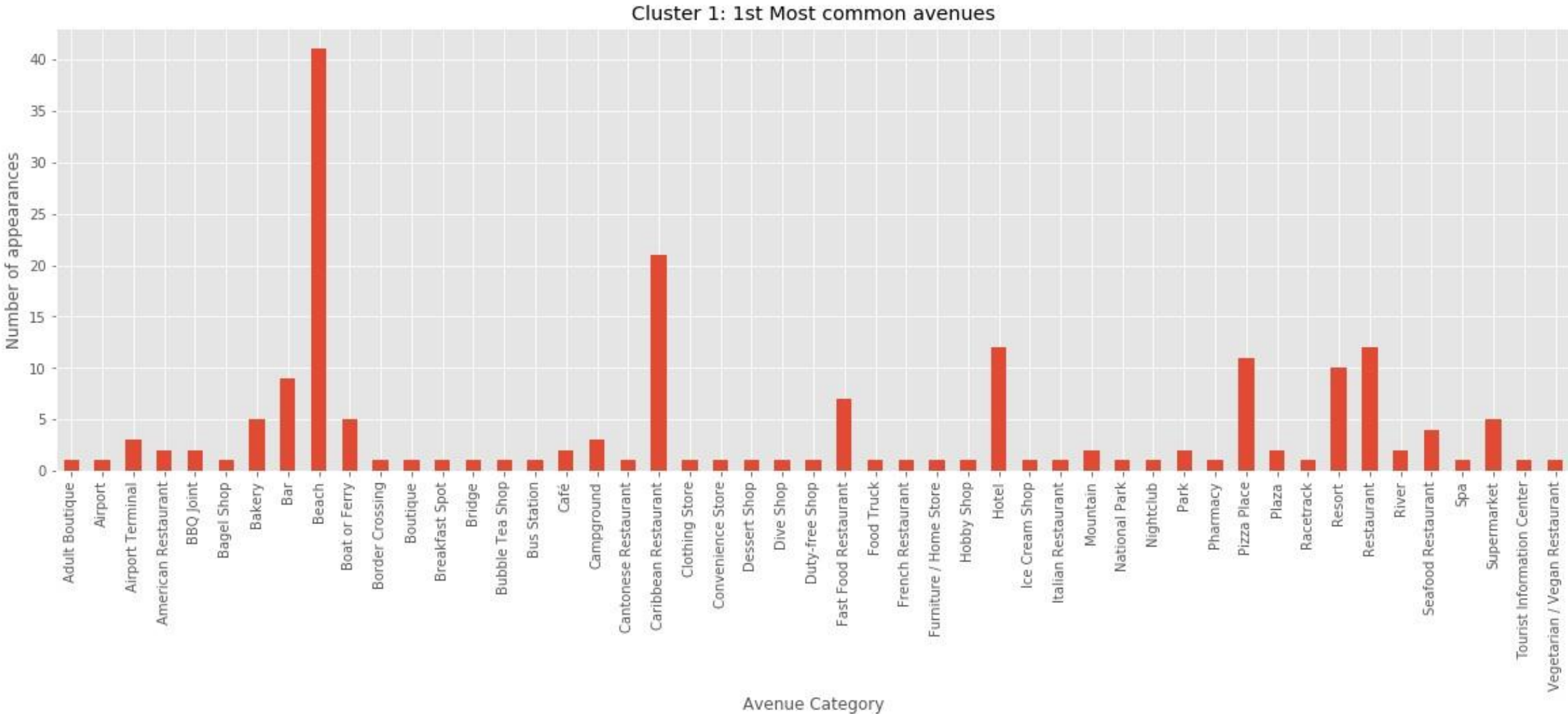
- Get the top 10 most common venues category of each city and run k-means clustering

	Country	City	Latitude	Longitude	Cluster Labels	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
0	Anguilla	The Valley	18.214586	-63.051776	5.0	Beach	French Restaurant	Resort	Caribbean Restaurant	Bar	Hotel	Italian Restaurant	Seafood Restaurant	Beach Bar	Hotel Bar
1	Antigua and Barbuda	Saint John's	17.118457	-61.844851	5.0	Resort	Beach	Caribbean Restaurant	Hotel	Bar	Café	Middle Eastern Restaurant	Sandwich Place	Cocktail Bar	Mediterranean Restaurant
2	Aruba	Angochi	12.520460	-69.964053	5.0	Beach	Resort	Caribbean Restaurant	Hotel	Grocery Store	Seafood Restaurant	Scenic Lookout	Food Court	Brazilian Restaurant	Chinese Restaurant
3	Aruba	Babijn	12.540947	-69.995816	5.0	Beach	Resort	Caribbean Restaurant	Hotel	Grocery Store	Seafood Restaurant	Pub	Bar	Brazilian Restaurant	Chinese Restaurant
4	Aruba	Oranjestad	12.526874	-70.035685	5.0	Beach	Resort	Caribbean Restaurant	Hotel	Grocery Store	Seafood Restaurant	Bar	Fast Food Restaurant	Restaurant	Bakery
5	Bahamas	Freeport	26.535681	-78.695362	5.0	Resort	Caribbean Restaurant	Beach	Restaurant	Pizza Place	Mobile Phone Shop	Hotel Bar	Bar	Latin American Restaurant	Fast Food Restaurant
6	Bahamas	Nassau	25.078346	-77.338333	5.0	Beach	Resort	Hotel	Caribbean Restaurant	Italian Restaurant	Restaurant	Ice Cream Shop	Café	Coffee Shop	Sushi Restaurant
7	Barbados	Bridgetown	13.097783	-59.618418	5.0	Beach	Caribbean Restaurant	Café	Bar	Resort	Sandwich Place	Seafood Restaurant	Hotel	Asian Restaurant	Food Truck
8	Bermuda	Hamilton	32.295608	-64.782705	5.0	Restaurant	Beach	Resort	Café	Hotel	Seafood Restaurant	Golf Course	Harbor / Marina	Bar	Coffee Shop
9	Bonaire	Kralendijk	12.147174	-68.274078	5.0	Resort	Beach	Café	Hotel	Surf Spot	Caribbean Restaurant	Bar	Beach Bar	Grocery Store	BBQ Joint



- Cluster 0: Red
- Cluster 1: Purple
- Cluster 2: Blue
- Cluster 3: Soft Blue
- Cluster 4: Green
- Cluster 5: Orange

Example of cluster most common avenues



Conclusion

- ❑ This project gives a good insight of the kind of activities practiced all over the Caribbean region just by looking at the map with the clusters
- ❑ Differences and Similarities between cities reflected in the clustering
- ❑ Foursquare API was able to provide enough details to get an interesting result
- ❑ A fare starting point to chose where to travel in the Caribbean is provided
- ❑ More cities may be added to the data to get a more completed work