

## 1 DATA

### 1.1 Acquisition

In order to get a meaningful data, 284 cities ranked by population in The Caribbean were chosen based on the following website: <https://population.mongabay.com/population/region/caribbean>.

The data was saved in the 'caribbean.csv' file composed of two columns, the name of the city and the name of the county/territory that city belongs to. The library 'pandas' is used to read the '.csv' file and save it as a dataframe named 'df', figure (1) shows the first 10 rows.

	Country	City
0	Anguilla	The Valley
1	Antigua and Barbuda	Saint John's
2	Aruba	Angochi
3	Aruba	Babijn
4	Aruba	Oranjestad
5	Bahamas	Freeport
6	Bahamas	Nassau
7	Barbados	Bridgetown
8	Bermuda	Hamilton
9	Bonaire	Kralendijk

**Figure 1.** First 10 rows of dataframe 'df' imported from caribbean.csv file .

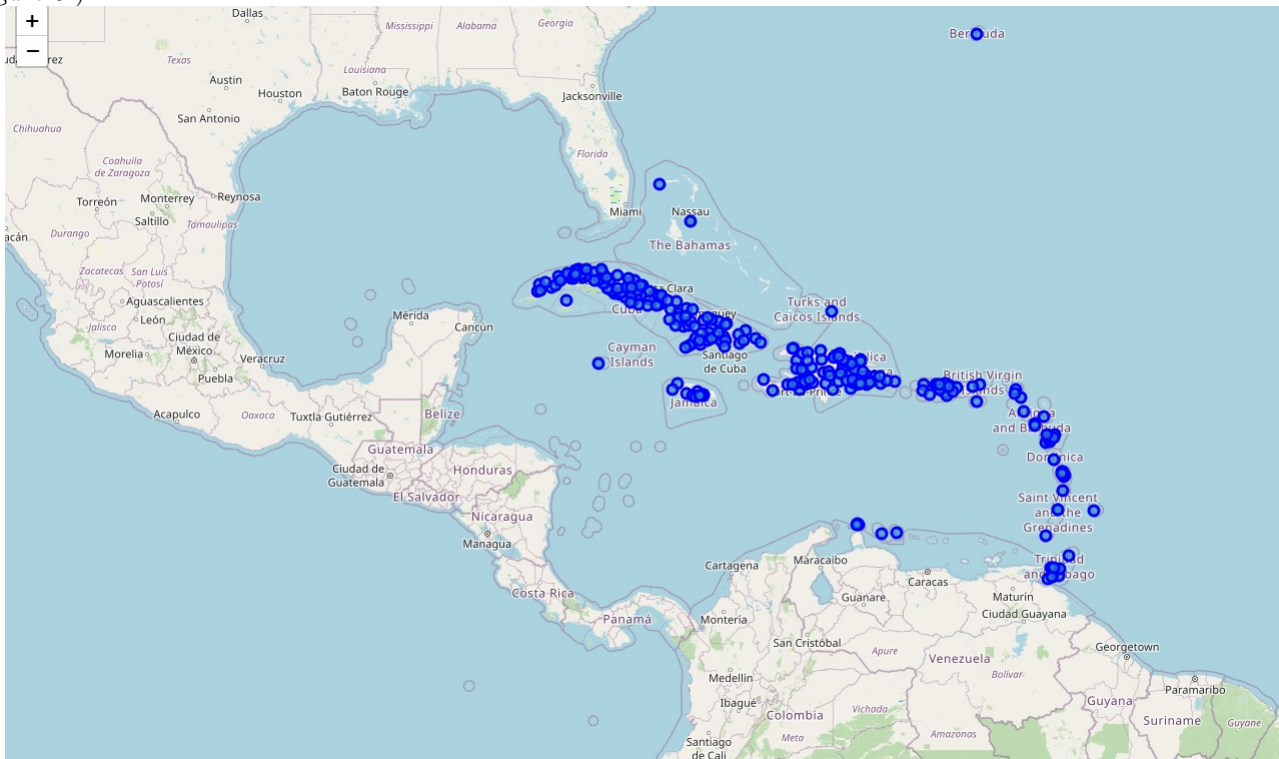
### 1.2 Treatment

The geopy library is used to get the latitude and longitude of every city, and this information is added to the dataframe 'df' as shown in image (2).

	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

**Figure 2.** First 10 rows of dataframe 'df' after being joined with the columns Latitude and Longitude .

A map of The Caribbean region is created using the 'folium' library with the chosen cities superimposed on top (figure 3).



**Figure 3.** The Caribbean region with cities.

Foursquare API is used to explore each city and find the top 100 venues that are in radius of 2500 meters. An example of the Valley city is shown in figure (4).

	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

**Figure 4.** The Valley venues.