Moving to a child friendly neighborhood in

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Introduction

Moving from New York to Madrid

5 years ago, Irene and Carlos went to New York to develop their professional careers in marketing and finance respectively. Carlos, who is currently working for a FinTech startup, has been offered a position in Madrid as the company's Country Manager for Iberia (Spain and Portugal). As Irene's creative work is flexible and doesn't require her to physically attend her company's offices, they both have decided that Carlos should accept the offering and, therefore, move together to Madrid.

Choosing a neighborhood

Irene and Carlos live in Chelsea, one of Manhattan's neighborhoods. They love living there because of the leisure venues that it offers them, and would like to find in Madrid a neighborhood with venues similar to the ones they enjoy in Chelsea.

On the other hand, Carlos and Irene are planning to have children in the near future, and they consider that a good neighborhood in which to raise a child should have a good amount of what they call child friendly spots: playgrounds, libraries, schools and hospitals.

Irene and Carlos are asking themselves which of Madrid's center neighborhoods will best fit their needs by offering similar venues to the ones they enjoy in Chelsea, and by presenting the greatest amount as possible of child friendly spots.

Data

I gathered the following data to help Irene and Carlos find the neighborhoods that best fits their needs:

Chelsea's data

I obtained New York's neighborhoods names and location data from the .json file saved in Cognitive Class's server that was used in week's 3 lab. After loading the relevant data into a new dataframe, I filtered it to make it contain only Chelsea's information.

	Borough	Neighborhood	Latitude	Longitude
0	MANHATTAN	CHELSEA	40.744035	-74.003116

Table1. Chelsea's geo dataframe

I then used Foursquare's API to obtain data regarding Chelseas venues; I limited the search to 100 results in a radius of 500 meters around Chelsea's center.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	CHELSEA	40.744035	-74.003116	Milk & Hops Chelsea	40.744751	-74.002595	Beer Bar
1	CHELSEA	40.744035	-74.003116	TAO Downtown	40.742545	-74.003837	Asian Restaurant
2	CHELSEA	40.744035	-74.003116	Bathtub Gin	40.743638	-74.003290	Speakeasy
3	CHELSEA	40.744035	-74.003116	Atlantic Theater Company (Linda Gross Theater)	40.743953	-74.001476	Theater

Table 2. Example of Chelsea's venues dataframe

Madrid's center data

I obtained Madrid's center boroughs and neighborhoods names by merging and filtering data present in a pair of .csv files found in https://datos.madrid.es.

Once I had the names of the 31 neighborhoods in Madrid's center, I used GeoPy's library to obtain their location data.

	Borough	Neighborhood	Latitude	Longitude
0	CENTRO	PALACIO	40.415129	-3.715618
1	CENTRO	EMBAJADORES	40.409681	-3.701644
2	CENTRO	CORTES	40.414348	-3.698525
3	CENTRO	JUSTICIA	40.423957	-3.695747

Table 3. Example of Madrid's neighborhoods geo dataframe

In the same way I did with Chelsea, I obtained Madrid's venues data using Foursquare's API was used to retrieve data regarding Madrid's center neighborhoods venues.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	PALACIO	40.415129	-3.715618	Santa Iglesia Catedral de Santa María la Real ...	40.415767	-3.714516	Church
1	PALACIO	40.415129	-3.715618	Plaza de La Almudena	40.416320	-3.713777	Plaza
2	PALACIO	40.415129	-3.715618	Cervecería La Mayor	40.415218	-3.712194	Beer Bar
3	PALACIO	40.415129	-3.715618	Corral de la Morería	40.412619	-3.714249	Performing Arts Venue

Table 4. Example of Madrid's venues dataframe

I obtained the last piece of data, the data regarding Madrid's child friendly spots, in .csv files found in https://datos.madrid.es. After filtering the dataframes containing the information of each type of spot, I merged them all together into one single dataframe.

Neighborhood	Playgrounds	Schools	Libraries	Hospitals
GUINDALERA	22	15	2	4
LEGAZPI	17	6	0	1
ACACIAS	16	17	1	2
DELICIAS	13	13	1	1

Table 5. Example of Madrid's child friendly spots dataframe