

Capstone Project.

Recommendation of a place where to live in Mexico City based on nearby venues of interest

Recommendation of places nice to live is helpful for everybody.

- Someone who wants to buy or rent a new place needs to know if the neighborhood in which it is located is nice or not.
- Knowing in advance if a place is surrounded by venues of interest is important when deciding on where to settle.

Data acquisition

- The location data was collected from the foursquare API. The analysis was focused only in one Borough because of the limit on the calls to the API with a free account.
- The geospatial data was obtain from the open data web page of Mexico City <https://datos.cdmx.gob.mx/>

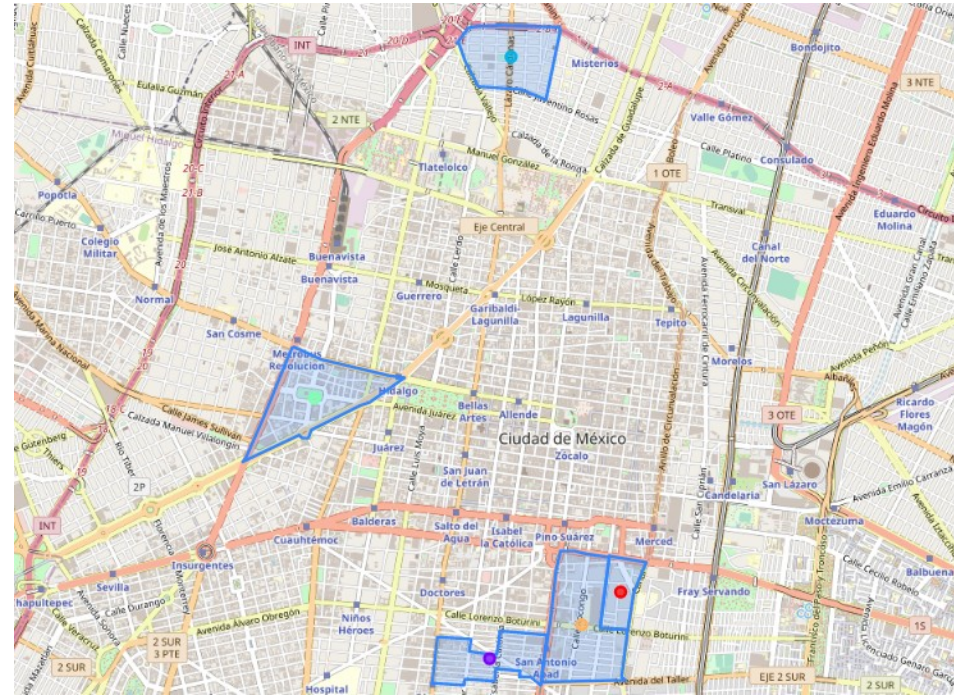
The cosine similarity was used to obtain the recommendations

- The cosine similarity is a measure of similarity between two objects. To implement the method, a vector was assembled for every neighborhood in the Borough, with the frequency of venue categories as its components.
- Then, another vector that represents the ideal neighborhood for a person was created and the cosine similarity was calculated in order to identify neighborhoods similar to this one.
- For instance, a person who is interested in the categories: Scenic Lookout, Monument, Landmark, General Entertainment, History Museum, Dance Studio and Coffee Shop, obtains the recommendations shown below.

	Neighborhood	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
22	ESPERANZA	Seafood Restaurant	Mexican Restaurant	Coffee Shop	Fast Food Restaurant	Market	Warehouse Store	Gym / Fitness Center	Restaurant	Burger Joint	Gym
40	OBRERA II	Taco Place	Bar	Mexican Restaurant	Bakery	Seafood Restaurant	Gym	Bistro	Stationery Store	Liquor Store	Indie Theater
44	PERALVILLO I	Mexican Restaurant	Taco Place	Seafood Restaurant	Fried Chicken Joint	Dessert Shop	Diner	Restaurant	Food	Burger Joint	Furniture / Home Store
59	TABACALERA	Coffee Shop	Mexican Restaurant	Taco Place	Hotel	Plaza	Argentinian Restaurant	Exhibit	Diner	Restaurant	Bar
60	TRANSITO	Ice Cream Shop	Mexican Restaurant	Seafood Restaurant	Taco Place	Coffee Shop	Sushi Restaurant	Steakhouse	Breakfast Spot	Burger Joint	Snack Place

Territorial delimitations of the recommended neighborhoods.

The recommended neighborhoods are shown in a map.



Conclusion and prospects

- As we can see, the recommended neighborhoods have some of the venue categories that the person is most interested among their most frequent venue categories.
- In the map we can visualize the neighborhood's territorial delimitation.
- In a future analysis, information about security and transport of the neighborhoods can be included in order to improve the quality of the recommendations. This information is available also in the web page <https://datos.cdmx.gob.mx/>