# Moving to a similar neighborhood in Mexico City

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Introduction

Many people in Mexico City are moving to new houses every day, which is great but, a lot of people have problems getting familiarized with the new neighborhood because they miss their old neighborhood and its venues they used to go . For example: they miss their favorite tacos or their favorite coffee shop.

So, we can prevent people to expend many hours looking for a new neighborhood with the same kind of venues that they have nearby their old house. Instead, we can recommend neighborhoods with almost the same kind of venues as the old neighborhood
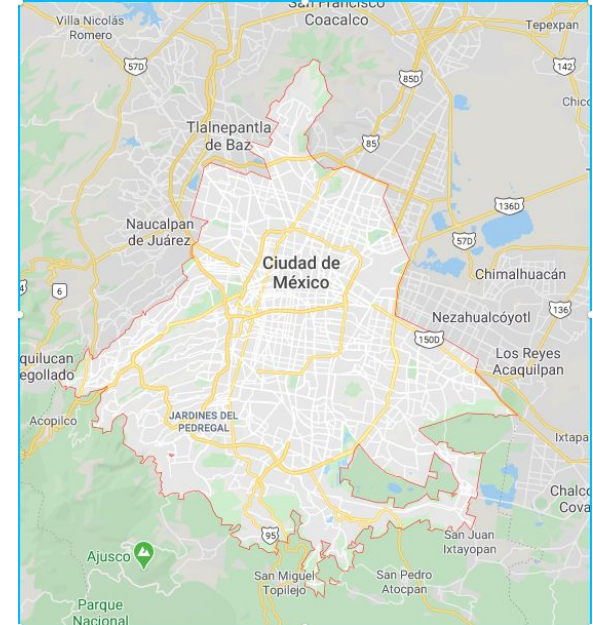
The problem

People spend many hours looking for neighborhoods with similar kind of venues when they are buying a new house

Audience: People who are looking for a new neighborhood to move in

Solution

Create a basic recommendation system, using clustering and the Foursquare API, to show people the neighborhoods that are similar to theirs.

Data

	COLONIA	ENTIDAD	Geo Point	Geo Shape	CVE_ALC	ALCALDIA	CVE_COL	SECC_COM	SECC_PAR
0	IRRIGACION	9.0	19.4429549298,-99.2099357048	{"type": "Polygon", "coordinates": [[[-99.2115...	16	MIGUEL HIDALGO	16-035	5079, 5080, 5083, 5102	5068, 5082
1	MARINA NACIONAL (U HAB)	9.0	19.4466319056,-99.1795110575	{"type": "Polygon", "coordinates": [[[-99.1797...	16	MIGUEL HIDALGO	16-049	5137, 5182	NaN
2	PEDREGAL DE STO DOMINGO VI	9.0	19.3234027183,-99.1654676133	{"type": "Polygon", "coordinates": [[[-99.1622...	3	COYOACAN	03-144	381, 394, 494, 416, 417, 439	NaN
3	VILLA PANAMERICANA 7MA. SECCIN (U HAB)	9.0	19.304604269,-99.1677617231	{"type": "Polygon", "coordinates": [[[-99.1676...	3	COYOACAN	03-121	NaN	474, 475
4	VILLA PANAMERICANA 6TA. SECCIN (U HAB)	9.0	19.3112238873,-99.1696478642	{"type": "Polygon", "coordinates": [[[-99.1702...	3	COYOACAN	03-120	NaN	458

Features definition

Column name	Data type	Description
COLONIA	object	Neighborhood's name
ENTIDAD	float64	State's ID
Geo Point	object	Latitude and Longitude separated by comma
Geo Shape	object	JSON with the coordinates of the neighborhood's area shape
CVE_ALC	int64	City's ID
ALCALDIA	object	City's name
CVE_COL	object	Neighborhood's ID
SECC_COM	object	Data used for electoral purposes
SECC_PAR	object	Data used for electoral purposes

Dropped features

Dropped features	Reason
ENTIDAD	We will work with only one state so this feature is always the same
Geo Shape	We won't use the area of the neighborhood so let's drop this feature
CVE_ALC	We won't use the city's ID so let's drop this feature
CVE_COL	We won't use the neighborhood's ID so let's drop this feature
SECC_COM	We won't use this feature so let's drop this feature
SECC_PAR	We won't use this feature so let's drop this feature

More of data preprocessing

|	COLONIA	ENTIDAD	Geo Point	Geo Shape	CVE_ALC	ALCALDIA	CVE_COL	SECC_COM	SECC_PAR
0	IRRIGACION	9.0	19.4429549298,-99.2099357048	{"type": "Polygon", "coordinates": [[[-99.2115...	16	MIGUEL HIDALGO	16-035	5079, 5080, 5083, 5102	5068, 5082
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4	VILLA PANAMERICANA 6TA. SECCIN (U HAB)	9.0	19.3112238873,-99.1696478642	{"type": "Polygon", "coordinates": [[[-99.1702...	3	COYOACAN	03-120	NaN	458

	COLONIA	Geo Point	ALCALDIA
0	IRRIGACION	19.4429549298,-99.2099357048	MIGUEL HIDALGO
1	MARINA NACIONAL (U HAB)	19.4466319056,-99.1795110575	MIGUEL HIDALGO
2	PEDREGAL DE STO DOMINGO VI	19.3234027183,-99.1654676133	COYOACAN
3	VILLA PANAMERICANA 7MA. SECCIN (U HAB)	19.304604269,-99.1677617231	COYOACAN
4	VILLA PANAMERICANA 6TA. SECCIN (U HAB)	19.3112238873,-99.1696478642	COYOACAN

	neighborhood	borough	lat	lng
0	IRRIGACION	MIGUEL HIDALGO	19.442955	-99.209936
1	MARINA NACIONAL (U HAB)	MIGUEL HIDALGO	19.446632	-99.179511
2	PEDREGAL DE STO DOMINGO VI	COYOACAN	19.323403	-99.165468
3	VILLA PANAMERICANA 7MA. SECCIN (U HAB)	COYOACAN	19.304604	-99.167762
4	VILLA PANAMERICANA 6TA. SECCIN (U HAB)	COYOACAN	19.311224	-99.169648

Neighborhoods in the map

Neighborhoods divided by Borough
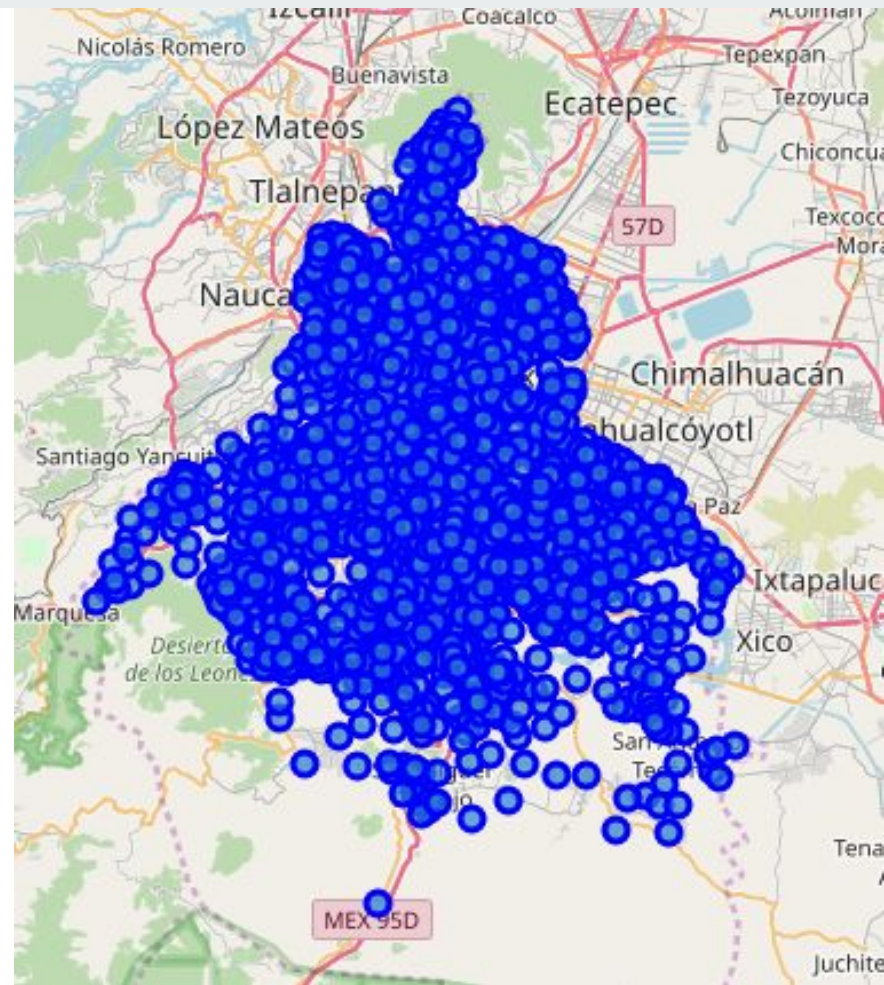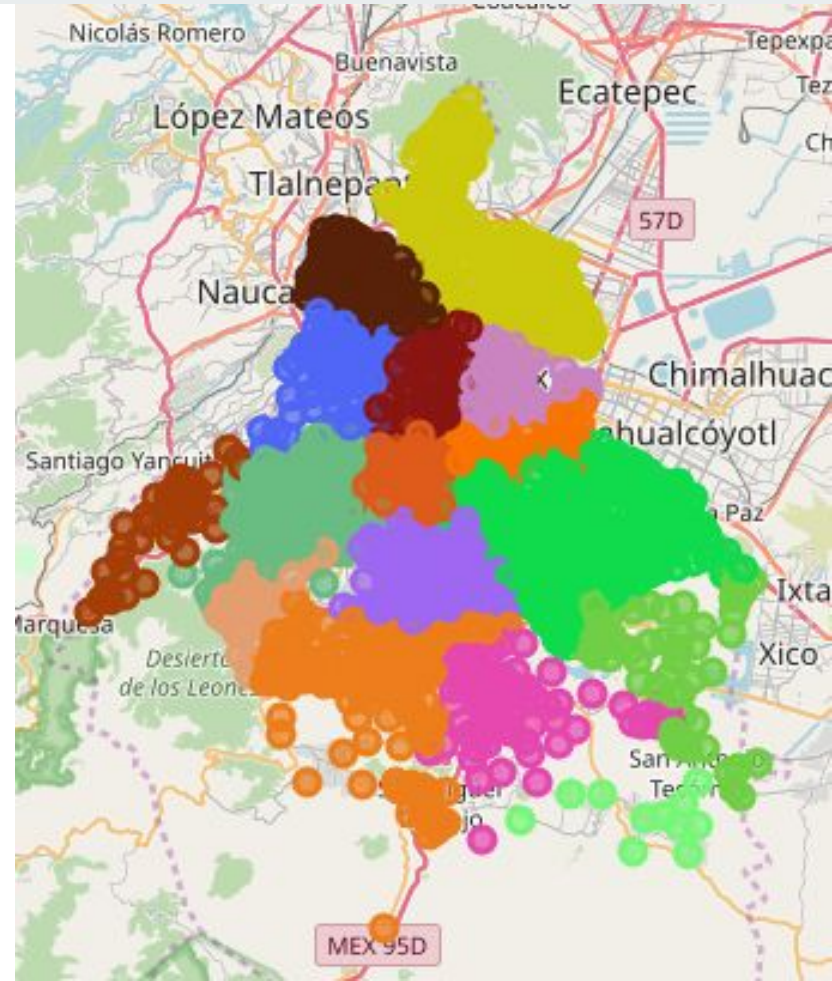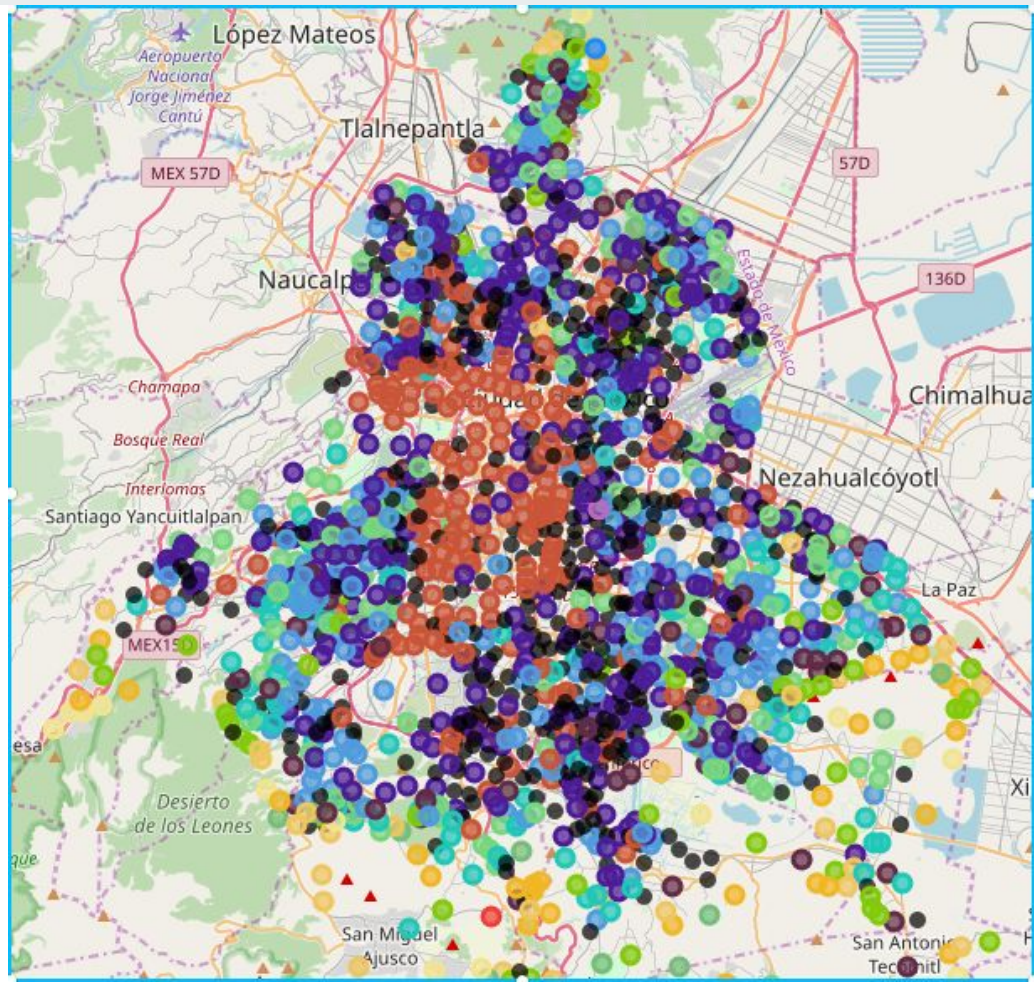
Results

Neighborhoods by venues' categories nearby

Next steps

Collect and fit the model adding the following data:

- Traffic data.
- Criminal data.
- Mean borough income

Thanks for your attention

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