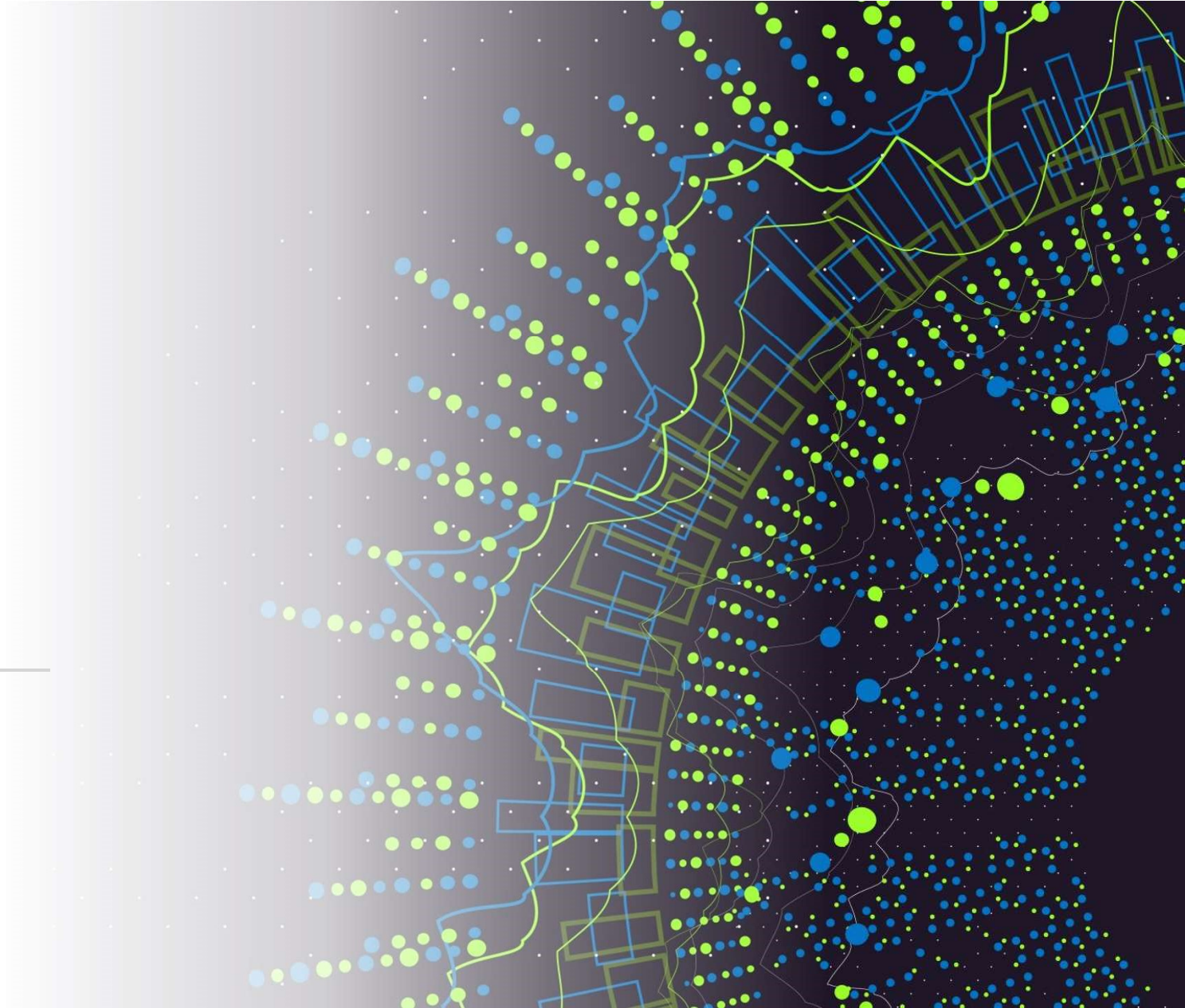




CLUSTERING MADRID

Miguel Rodríguez Morales



In this project we will be the optimal location of a business in a city area by:



GET THE DATA

Extracting the necessary data from the Madrid's City Hall and FourSquare API



WORK THE DATA

Making a segmentation of Madrid districts by k-means clustering



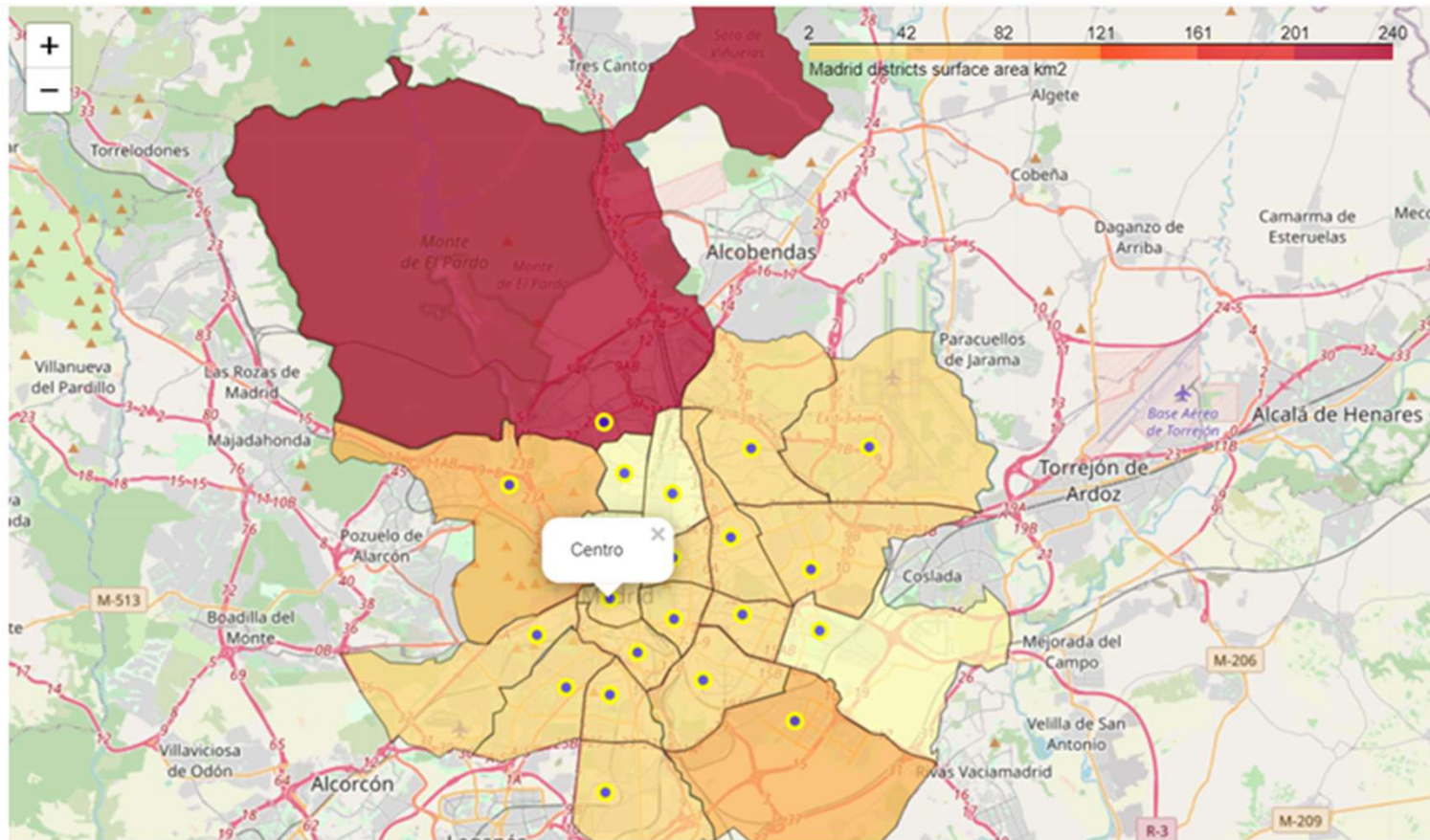
CONCLUSIONS

Analyzing the results and extracting conclusions based on them

The data used in this study includes the location of each district in the city of Madrid and the most popular venues of them.

	District	District Latitude	District Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Centro	40.415347	-3.707371	The Hat Madrid	40.414343	-3.707120	Hotel
1	Centro	40.415347	-3.707371	La Taberna de Mister Pinkleton	40.414536	-3.708108	Other Nightlife
2	Centro	40.415347	-3.707371	Plaza Mayor	40.415527	-3.707506	Plaza
3	Centro	40.415347	-3.707371	Gyoza Go!	40.416179	-3.708612	Dumpling Restaurant
4	Centro	40.415347	-3.707371	Bodegas Ricla	40.414266	-3.708077	Wine Bar

Once the data was obtained, it was possible to map every district of Madrid.



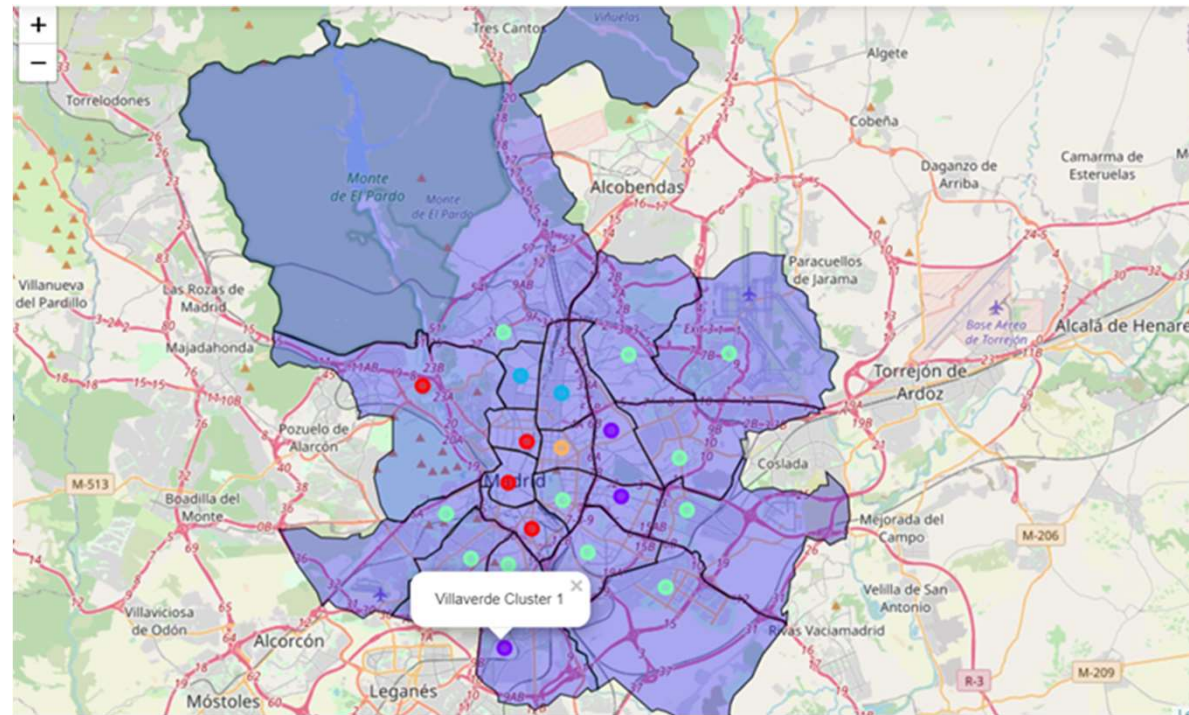
And we can obtain the most common venues by neighborhood:

	District	1st Most Common Venues	2nd Most Common Venues	3rd Most Common Venues	4th Most Common Venues	5th Most Common Venues	6th Most Common Venues	7th Most Common Venues	8th Most Common Venues	9th Most Common Venues	10th Most Common Venues
0	Arganzuela	Spanish Restaurant	Restaurant	Tapas Restaurant	Bakery	Beer Garden	Plaza	Mediterranean Restaurant	Gym / Fitness Center	Dessert Shop	Café
1	Barajas	Hotel	Spanish Restaurant	Coffee Shop	Restaurant	Argentinian Restaurant	Tapas Restaurant	Wine Bar	Deli / Bodega	Grocery Store	Supermarket
2	Carabanchel	Plaza	Metro Station	Bakery	Grocery Store	Colombian Restaurant	Soccer Field	Café	Nightclub	Spanish Restaurant	Mobile Phone Shop
3	Centro	Spanish Restaurant	Tapas Restaurant	Plaza	Hotel	Hostel	Ice Cream Shop	Mexican Restaurant	Cocktail Bar	Pastry Shop	Gourmet Shop
4	Chamartin	Spanish Restaurant	Restaurant	Tapas Restaurant	Gastropub	Pizza Place	Plaza	Grocery Store	Café	Mexican Restaurant	Bar
5	Chamberi	Restaurant	Spanish Restaurant	Plaza	Bar	Tapas Restaurant	Café	Brewery	Mediterranean Restaurant	Japanese Restaurant	Hotel
6	Ciudad Lineal	Spanish Restaurant	Tapas Restaurant	Restaurant	Bar	Park	Bakery	Plaza	Fast Food Restaurant	Sporting Goods Shop	Clothing Store
7	Fuencarral - El Pardo	Restaurant	Bar	Tapas Restaurant	Fast Food Restaurant	Café	Park	Spanish Restaurant	Clothing Store	Gym / Fitness Center	Video Game Store
8	Hortaleza	Spanish Restaurant	Plaza	Restaurant	Gym	Pizza Place	Pharmacy	Pub	Cosmetics Shop	Shopping Mall	Snack Place
9	Latina	Pizza Place	Lake	Student Center	Scenic Lookout	Tapas Restaurant	Metro Station	Sandwich Place	Gym	Park	Fast Food Restaurant
10	Moncloa - Aravaca	Golf Course	Fast Food Restaurant	Café	Tennis Court	American Restaurant	Noodle House	Opera House	Optical Shop	Other Nightlife	Paella Restaurant
11	Moratalaz	Bar	Park	Ice Cream Shop	Plaza	Coffee Shop	Café	Nightclub	Brewery	Breakfast Spot	Pub
12	Puente de Vallecas	Spanish Restaurant	Pub	Tapas Restaurant	Gym	Music Venue	Food & Drink Shop	Park	Concert Hall	Restaurant	Coffee Shop
13	Retiro	Spanish Restaurant	Bar	Café	Hotel	Brewery	Pizza Place	Museum	Grocery Store	Gym	Plaza
14	Salamanca	Spanish Restaurant	Restaurant	Seafood Restaurant	Mediterranean Restaurant	Boutique	Burger Joint	Tapas Restaurant	Coffee Shop	Bakery	Bar

And finally, we can get the clusters for every district in Madrid:

	District	1st Most Common Venues	2nd Most Common Venues	3rd Most Common Venues	4th Most Common Venues	5th Most Common Venues	6th Most Common Venues	7th Most Common Venues	8th Most Common Venues	9th Most Common Venues	10th Most Common Venues
13	Moratalaz	Bar	Park	Ice Cream Shop	Plaza	Coffee Shop	Café	Nightclub	Brewery	Breakfast Spot	Pub
14	Ciudad Lineal	Spanish Restaurant	Tapas Restaurant	Restaurant	Bar	Park	Bakery	Plaza	Fast Food Restaurant	Sporting Goods Shop	Clothing Store
16	Villaverde	Train Station	Spanish Restaurant	Mediterranean Restaurant	Café	Diner	Gastropub	Mobile Phone Shop	Metro Station	Design Studio	Train

Plaza
Brewery
Pub
Cream
Bar
Shop
Breakfast
Park
Spot
Ice
Nightclub
Café
Coffee



CONCLUSIONS:

As an easy conclusion, we can say that is not a good idea to open a restaurant in Madrid.
There are tons of them.

