

Best Location for Mexican Restaurant in Kyiv.

Madrid experience.

Introduction. There are many good and delicious Mexican restaurants in Madrid (Spain) due to different factors. Among these drivers, we can mention big Mexican diaspora living in Madrid, cultural diversity, food preferences of Spanish people, good purchasing power of city citizens. On the other hand, if we look at other European capital - Kyiv (Ukraine), we will not find huge variety of Mexican food restaurants in spite of many common factors that have Kyiv and Madrid:

- Both cities are European capitals.
- Cities population numbers are similar (more than 3 millions).
- Spain and Ukraine have almost the same dimension of the territory and quantities of countries' inhabitants.
- People in Madrid in Kyiv have good purchasing power. Income levels in the capitals of Spain and Ukraine are higher than in the rest of country.
- Mexican culture and food can be interesting for both cities' residents, especially for immigrants from Latin America.

The objective of this project is to find the best location for Mexican restaurant in Kyiv using the information regarding locations of Mexican restaurants in Madrid. People who want to begin this kind of business in Kyiv can be interested in this project.

Data. The main source of the data used in the project, is Foursquare geographical location information obtained from Foursquare developers

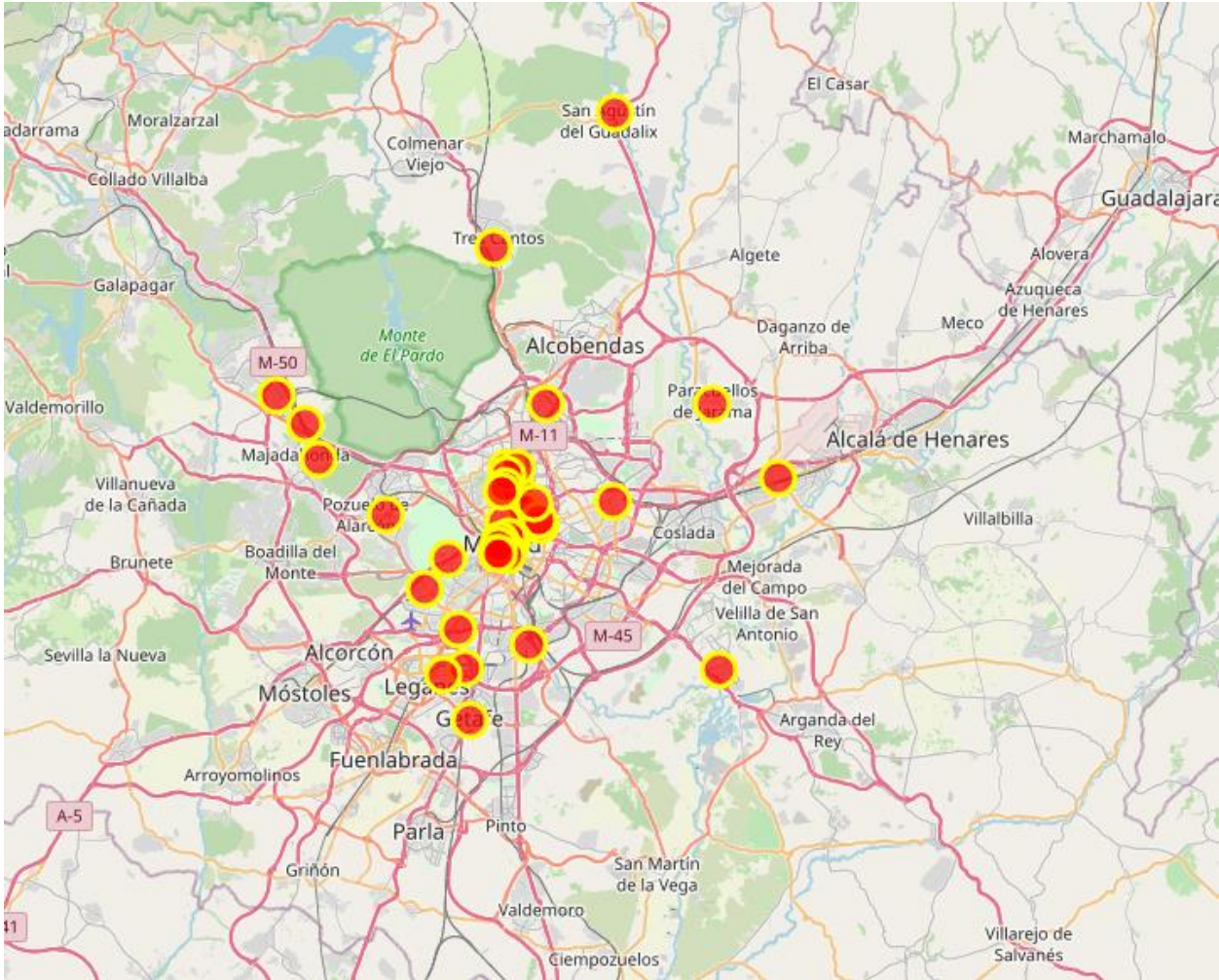
web-portal (<https://api.foursquare.com/v2/venues>). I used search API's to find all Mexican restaurants' locations in Madrid and Kyiv. Found geographical information was cleaned up and transformed in the Python data frames in order to be able to use obtained data in further calculations.

I found 42 Mexican restaurants in Madrid. Below is a part data frame of the found locations information.

	Name	Category	Address	City	Latitude	Longitude
0	Mexican Factory	Burrito Place	NaN	NaN	40.450129	-3.691512
1	Burro Delic Mexican Food	Mexican Restaurant	C.C. Parquesur	Leganés	40.339077	-3.733555
2	Mexican Factory Burrito Bar	Burrito Place	NaN	NaN	40.437485	-3.686225
3	MEXICando	Mexican Restaurant	NaN	Paracuellos de Jarama	40.503745	-3.531987
5	mexican factory	Mexican Restaurant	Calle Marie Cubrir 4	NaN	40.337768	-3.526724

Pic. 1. Locations of Mexican restaurants in Madrid. Head of Python data frame.

We can see these locations in Madrid on the Folium map:

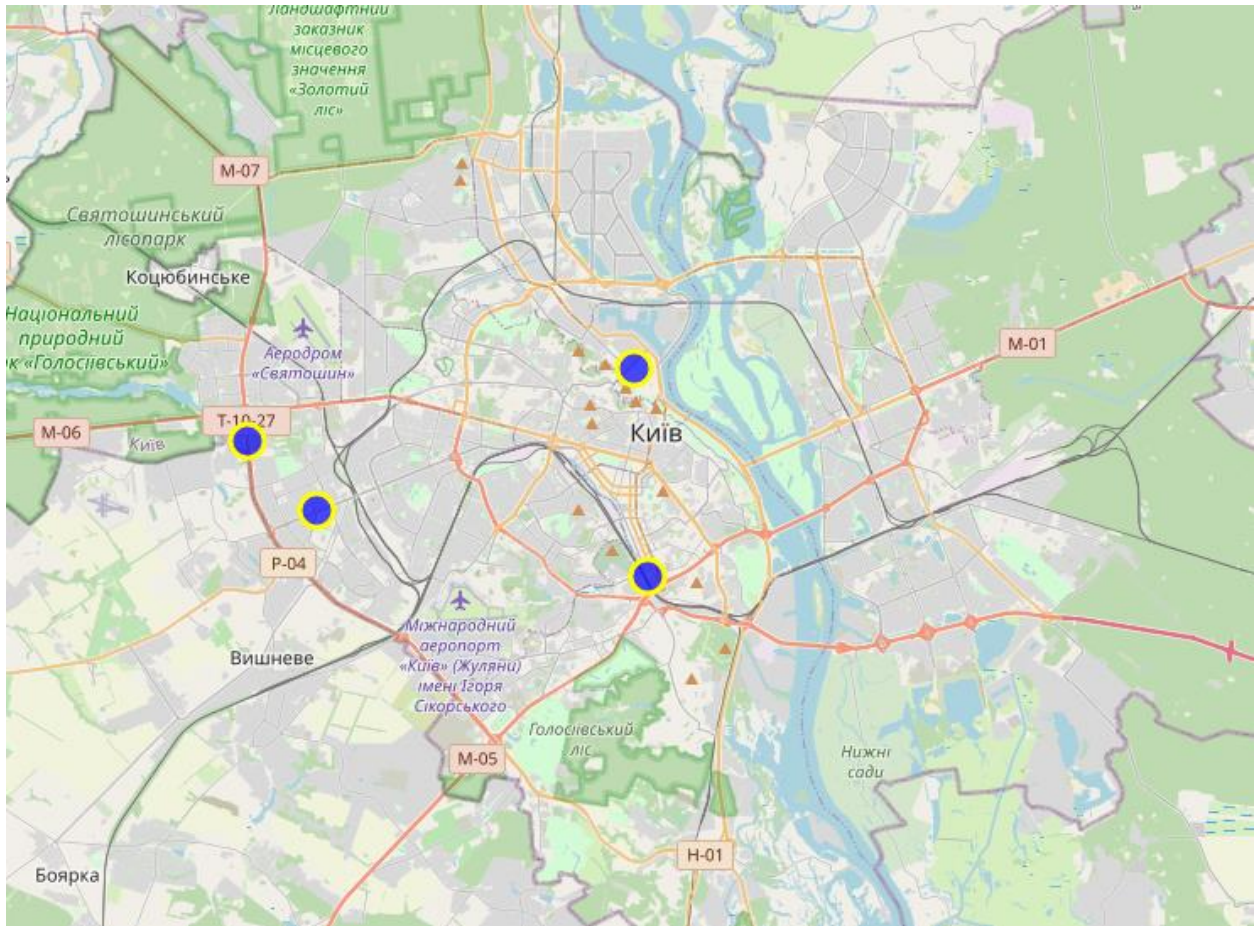


Pic. 2. Locations of Mexican restaurants in Madrid in Folium map.

In Kyiv only four Mexican restaurants were found. Results table (Pic. 3.) and locations marked on map(Pic. 4.) are below.

	Name	Category	Address	City	Latitude	Longitude
0	Rojo Ojo Mexican Food	Café	Окружная дорога, 22а	Київ	50.447757	30.357882
1	LosSantos Mexican food	Mexican Restaurant	ул. Изюмская 7	Київ	50.412937	30.520603
2	Dos Amigos	Mexican Restaurant	вул. Межигірська, 9	Київ	50.466785	30.515503
3	MexicanBar	Mexican Restaurant	Гната Юры	Київ	50.430068	30.385957

Pic. 3. Locations of Mexican restaurants in Kyiv. Python data frame.

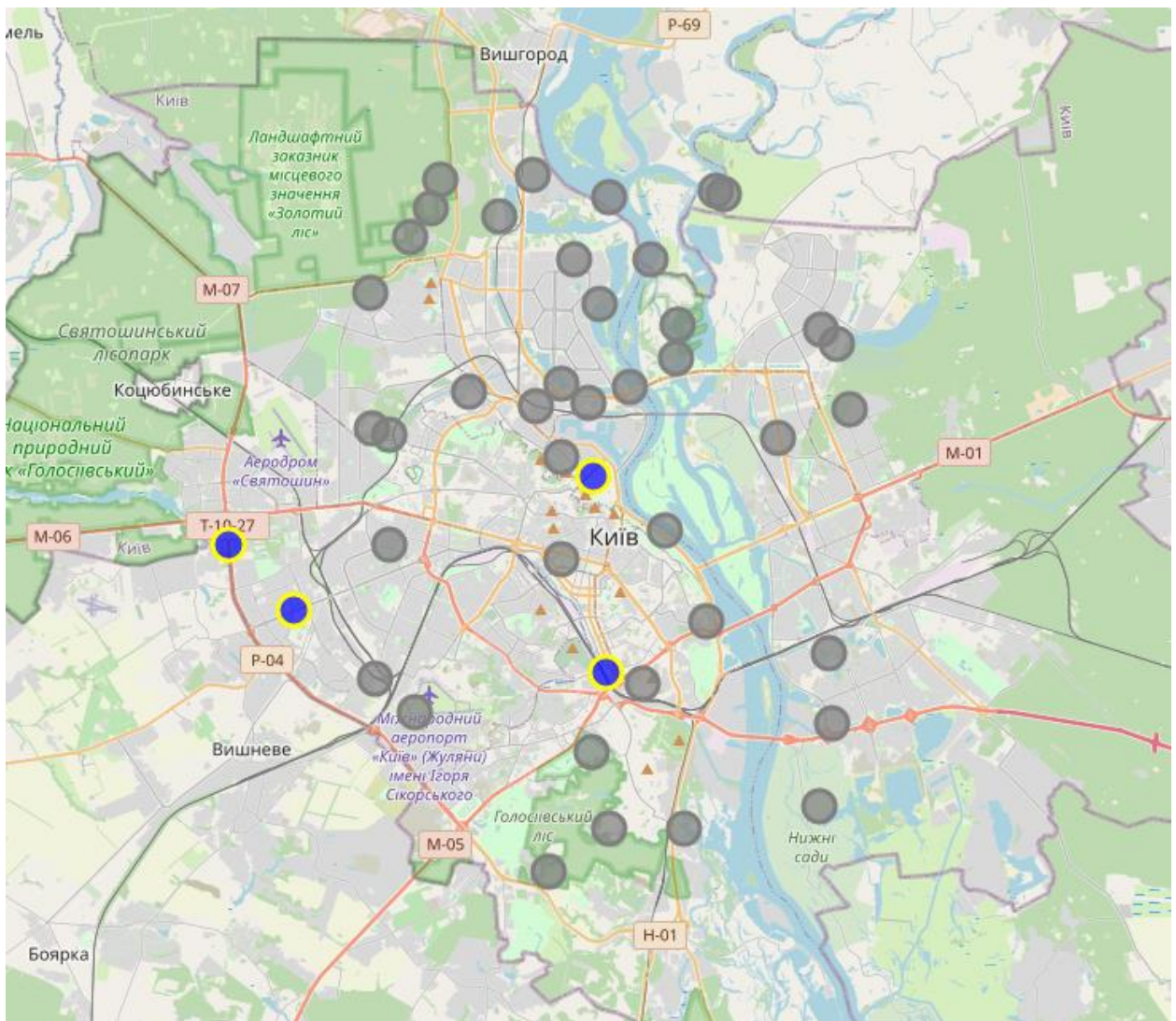


Pic. 4. Locations of Mexican restaurants in Kyiv in Folium map.

In addition, I prepared 40 random locations in Kyiv using Microsoft Excel and then loaded these locations in Python notebook. Below is a part of the list of these random locations (Pic. 5.). Their locations also are reflected in the Folium map (Pic. 6.).

	Name	Category	Adress	City	Latitude	Longitude
0	Random1	Mexican Restaurant	Random1	Kyiv	50.538	30.4749
1	Random2	Mexican Restaurant	Random2	Kyiv	50.427	30.5640
2	Random3	Mexican Restaurant	Random3	Kyiv	50.448	30.4276
3	Random4	Mexican Restaurant	Random4	Kyiv	50.370	30.5222
4	Random5	Mexican Restaurant	Random5	Kyiv	50.508	30.5519

Pic. 5. Random locations generated in Excel and imported in Jupyter notebook as panda data frame.



Pic. 5. Random locations (grey) and existing Mexican restaurants (blue) in Kyiv.

From our point of view, k-means clustering method can be applied to the obtained data set (Madrid and Kyiv geographical coordinates) in order to find out:

- The best locations in Kyiv for opening a new Mexican restaurant, considering the existing geographical locations of Mexican restaurants in Madrid. In this case some of random locations will belong to the best cluster (cluster with the biggest quantities of existing restaurants in Madrid city).
- Check if current locations of existing Mexican restaurants in Kyiv are good, looking at Madrid experience. Location is good if existing Kyiv restaurant location belongs to the best cluster (cluster with the biggest quantities of existing restaurants in Madrid city).

All details are in the Jupyter notebook attached to this report.