CAPSTONE PROJECT:

THE BATTLE OF NEIGHBORHOODS MADRID (SPAIN)

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Introduction - Business Problem

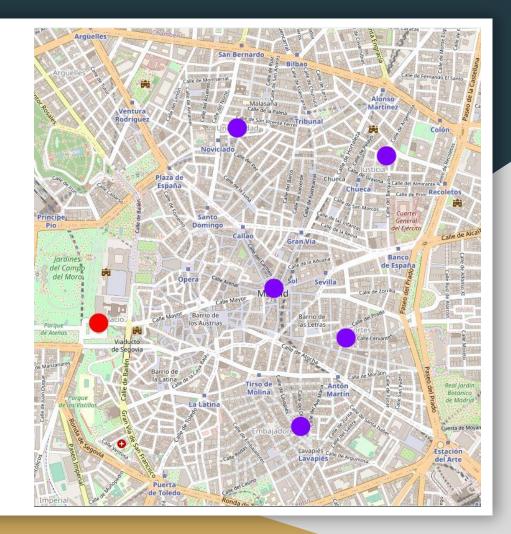
- Find the best location for a Japanese restaurant near "Puerta del sol", in the city center of Madrid, Spain.
- Identify the location that doesn't have any Japanese restaurant (if any) and also those with less restaurants in general.
- Identify other venues located in those areas. A good variety of venues might attract more people to the area rather than an area with a lack of them.

Data and cleaning

- From Wikipedia we got the information regarding boroughs and neighborhoods.
- We use Foursquare to get the data about restaurants and other venues per neighborhood.
- From a repository of Github we got the coordinates of the boundaries of the boroughs and neighborhoods.
- Duplicate or redundant information was dropped during the preparation of the data.
- Using geopy we added latitude and longitude of neighborhoods.

K-means: Clusters

- Using the K-means algorithm we create subgroups according to its similarity.
- We analyzed the data of other venues (no restaurants).
- Using the elbow method, we clustered the data into 2 subgroups.



Distribution of venues

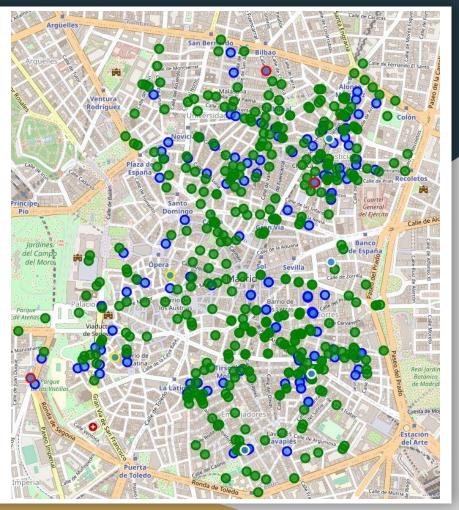
- Restaurants in blue.
- Different venues in green.
- Japanese restaurants in different colours to be able to differentiate them:

- Japanese: red

- Sushi: white

- Ramen: yellow

- Palacio is the neighborhood with fewer restaurants and venues in general.



Japanese Restaurants

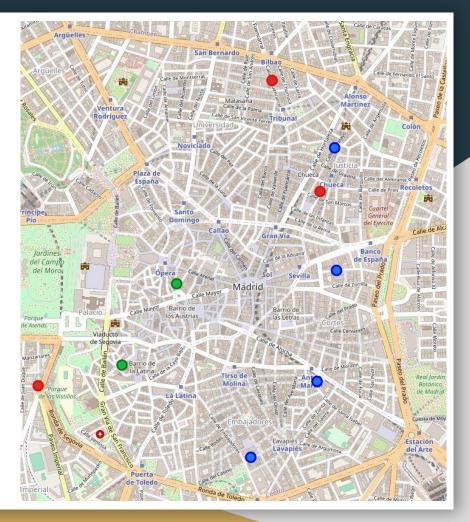
- Location of the Japanese restaurants.
- Different colours according their type:

Japanese: red

Sushi: blue

Ramen: green

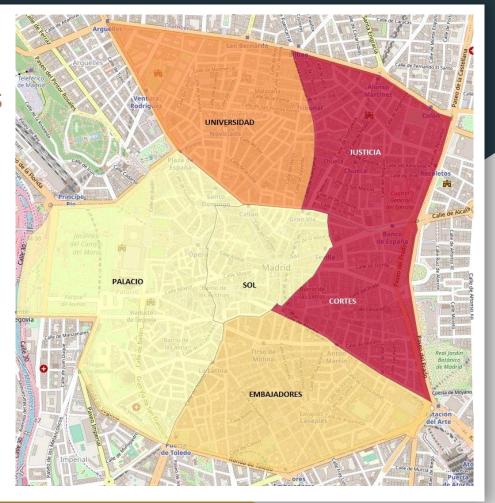
- Sushi restaurant is the more popular type.



Distribution of restaurants per neighborhood

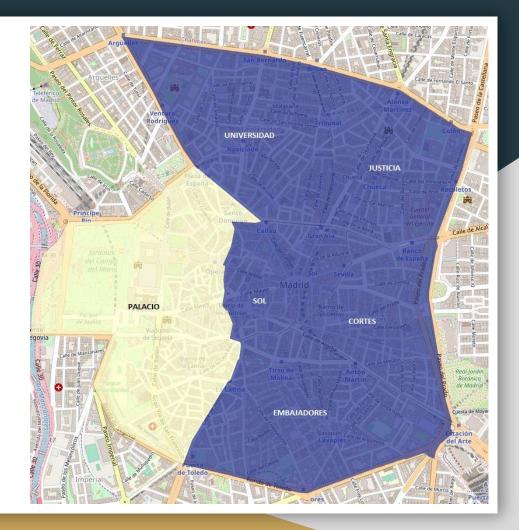
From higher to lower amount of restaurants:

- Justicia and Cortes
- Universidad
- Embajadores
- Palacio and Sol



Distribution of venues per neighborhood

- Big contrast: Palacio vs the other neighborhoods
- Palacio barely has venues to attract people



Results

- Palacio is the less appealing area to open the new restaurant. There aren't enough venues to attract people and has 2 Japanese food restaurants.
- Justicia and Cortes are already full of restaurants and both have already 2 Japanese restaurants located there. They are not a good choices.
- The last options: Sol and Embajadores. Similar amount of restaurants (17 vs 21).
- Embajadores has 2 sushi restaurants, but a Japanese restaurant can offer sushi among a big variety of food to attract the customers. Sol has only 1 ramen restaurant in the area.
- Sol is the neighborhood in which "Puerta del sol" is located, one of the main points of this study.

Conclusion

- The purpose of this project was to identify potential neighborhoods to open a Japanese restaurant near Puerta del sol.
- We verified other restaurants in the area (including Japanese restaurants) and other types of venues located in those areas.
- We identified as potential neighborhoods Sol and Embajadores.
- The final decision will be made by the stakeholders. They can take into consideration other factors like prices for renting the local or other social and economic factors.

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