

The background features abstract, overlapping green geometric shapes in various shades, creating a modern and dynamic feel. The shapes are primarily triangles and polygons, some with thin white outlines, set against a light gray background.

Find the best neighborhood in Paris to setup offices for a startup

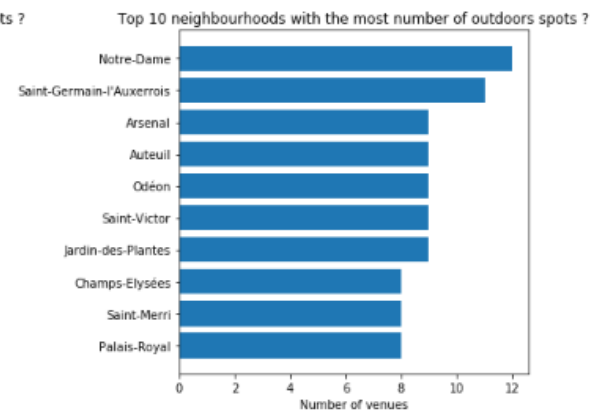
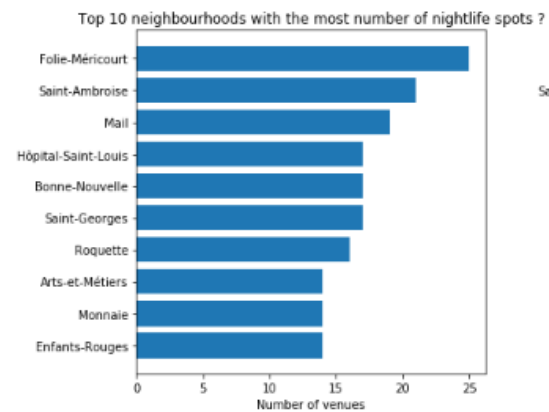
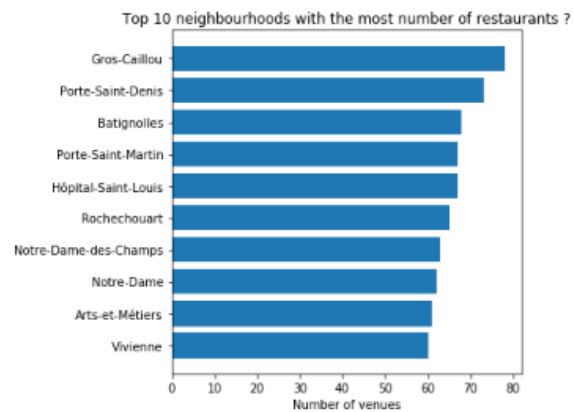
Final Capstone Project

Hiring young people is critical for a startup

- ▶ It's important for the company to be attractive to students and young peoples
- ▶ One way to attract talents is to have nice offices located in a neighborhood with a good quality of life.
- ▶ The problem is to find the best neighborhood in Paris to setup the offices.
- ▶ A neighborhood is supposed to be attractive to young people when there is a lot of:
 - ▶ Restaurants and Food venues. Students like to go outside to grab their meals
 - ▶ Nightlife Spots and Bars to chill out with friends and meet new people
 - ▶ Outdoors and Recreational venues to relax and playing sports

Data acquisition and cleaning

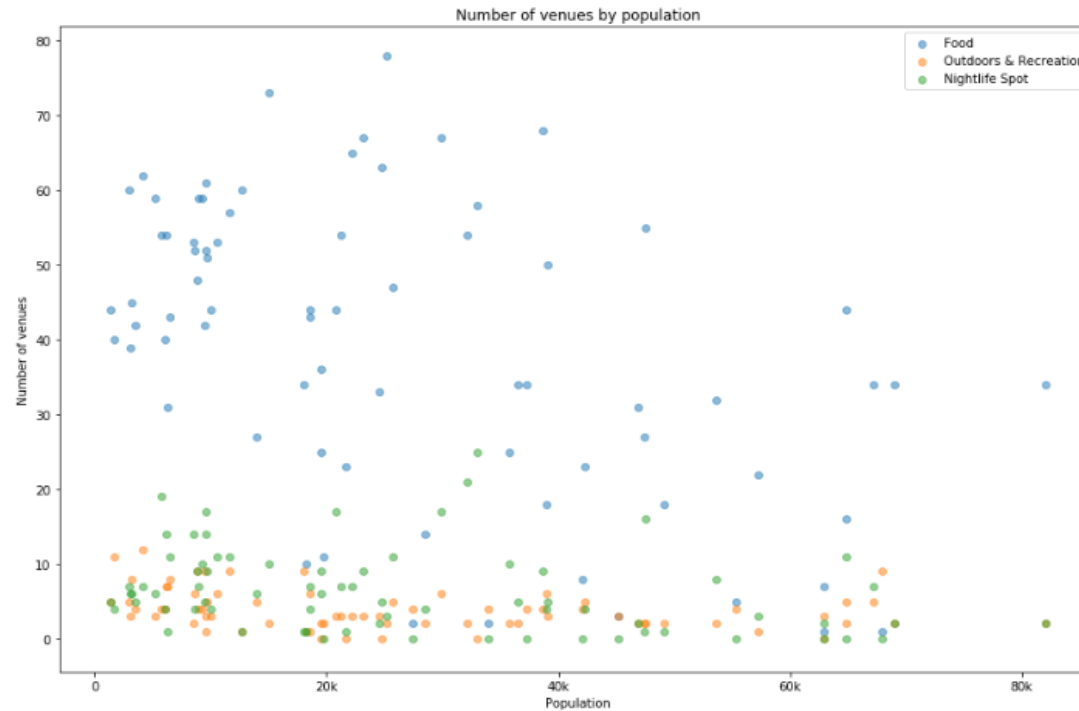
- ▶ The first source to get Paris neighborhood information is from the online platform <http://opendata.paris.fr>
- ▶ I used Wikipedia to get population of the different neighborhoods https://fr.wikipedia.org/wiki/Liste_des_quartiers_administratifs_de_Paris
- ▶ I used Foursquare to get information on the venues.
- ▶ I used another web site to get the Young Ratio. We define the Young Ratio as the percentage of people with age range between 20 and 39. We get data from the French Institute of Statistics and Economic Studies <https://www.insee.fr/fr/statistiques/zones/4177137>.

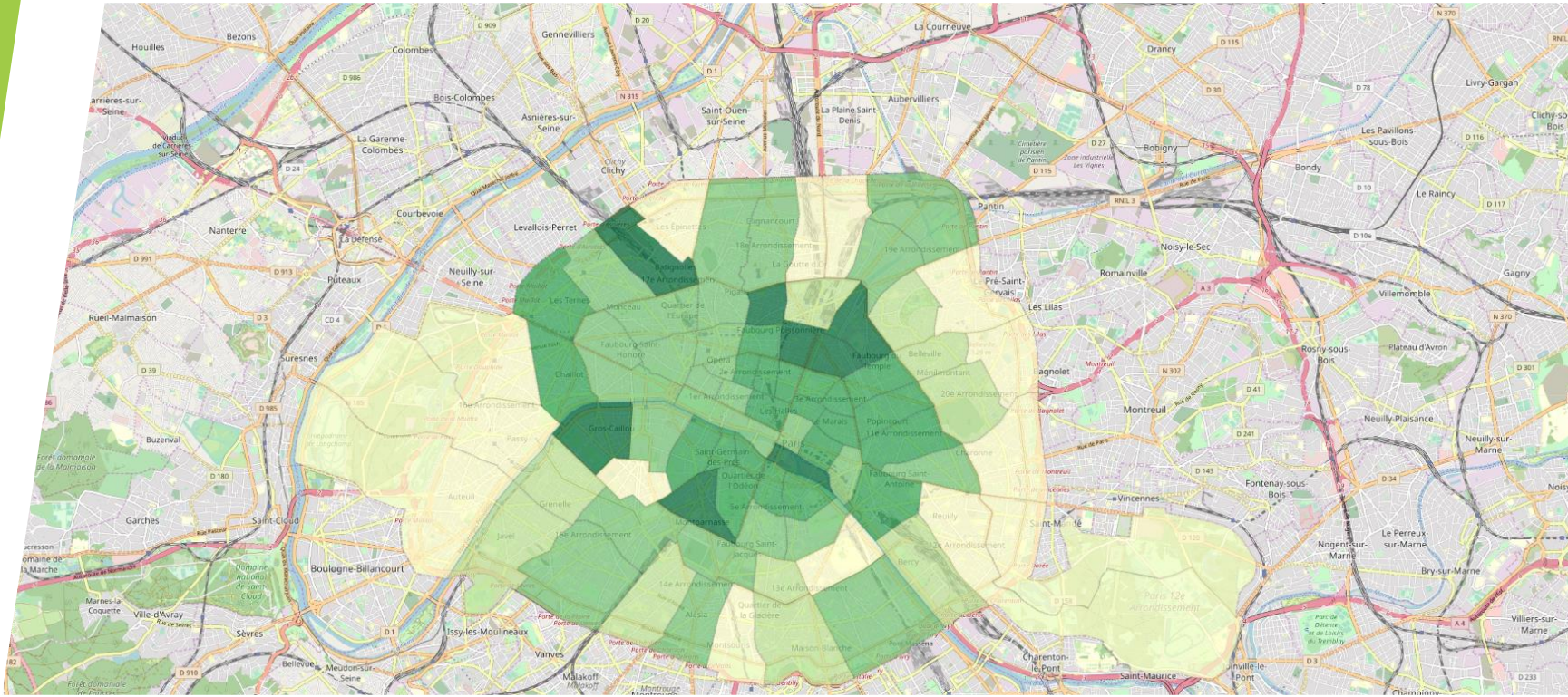


Bar Graphs of top 10 neighbourhoods by venue categories

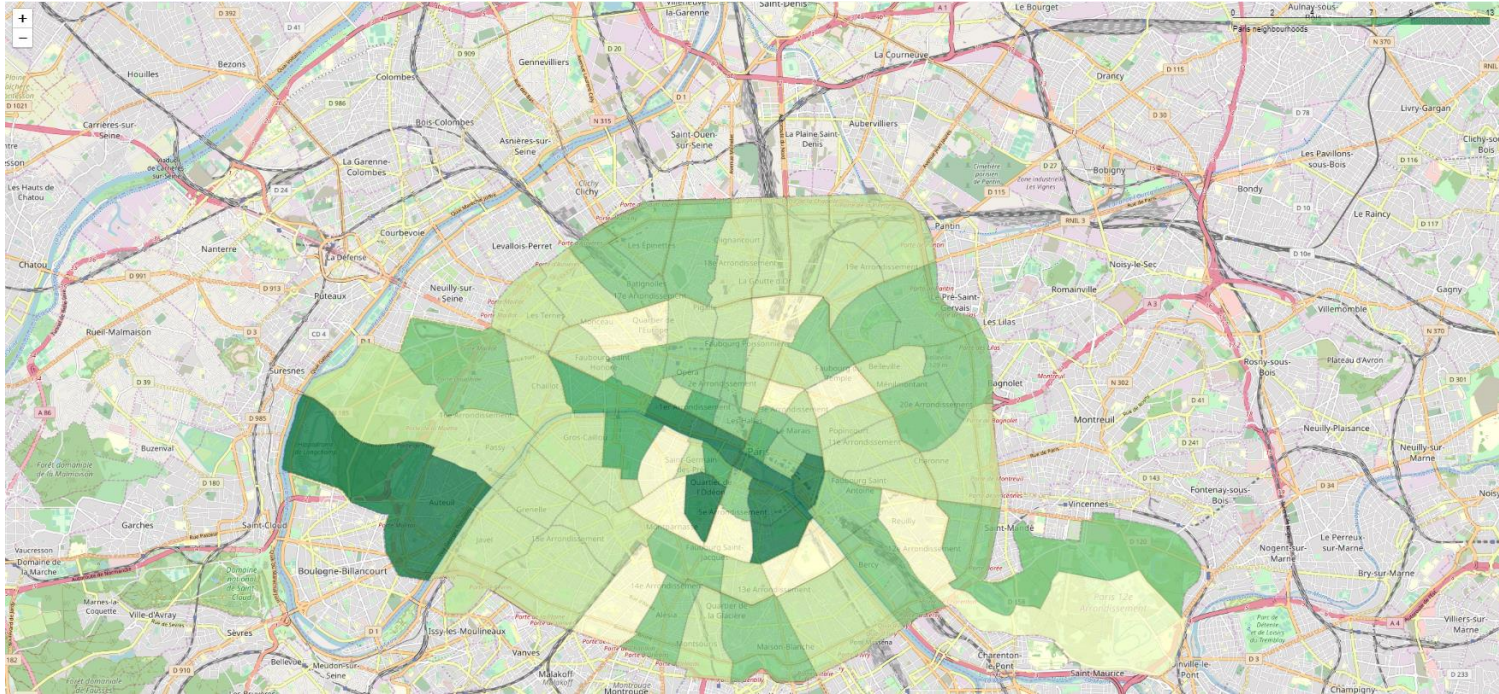
Scatter plot of number of venues by population

It seems from the graph that there is no relationship between the number of venues and the population.



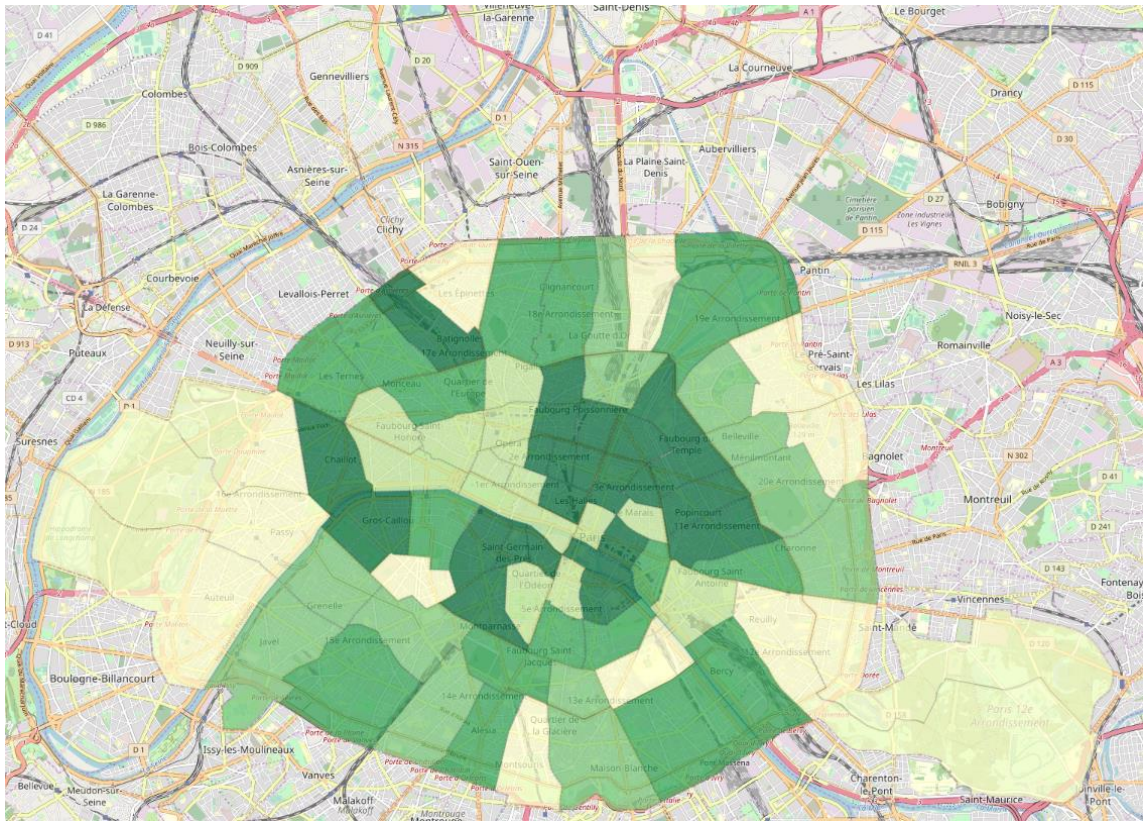


Map with Restaurants



Map with Outdoors & Recreation

Map with Clusters



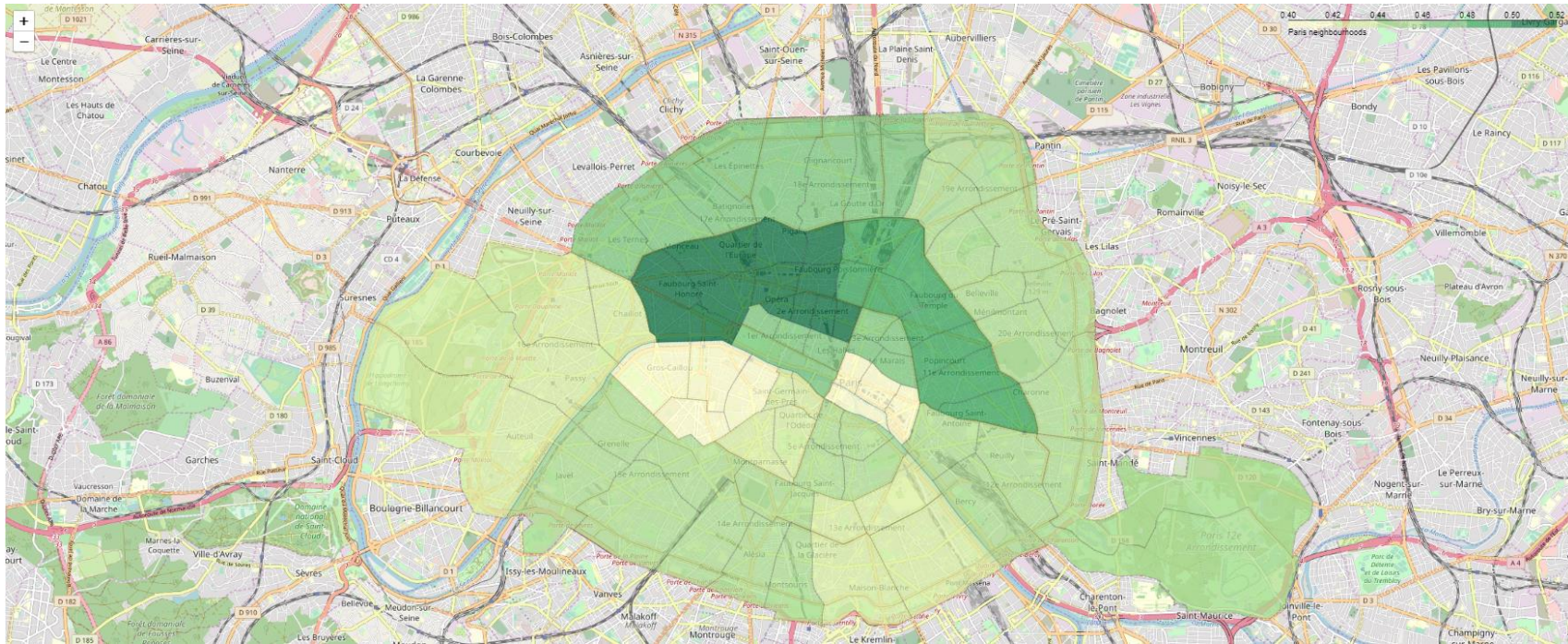
- ▶ I ran k-means to cluster the neighborhood into 5 clusters
- ▶ It seems that the most interesting neighborhoods are colored in dark green (cluster n° 4).

Most Common Venues by Cluster

- We can see that the Food venues is globally the 1st Most Common Venues for each neighborhood.
- For the cluster 4, the Nightlife Spot venues are ranked 2nd or 3rd.

Cluster Labels	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	0	Amélie	Food	Outdoors & Recreation	Shop & Service	Travel & Transport
49	0	Pigou	Shop & Service	Food	Travel & Transport	Professional & Other Places
47	0	Parc-de-Montsouris	Food	Outdoors & Recreation	Travel & Transport	Arts & Entertainment
41	0	Muette	Outdoors & Recreation	Food	Travel & Transport	Shop & Service
35	0	La Chapelle	Food	Outdoors & Recreation	Shop & Service	Nightlife Spot
62	0	Saint-Fargeau	Food	Shop & Service	Outdoors & Recreation	Travel & Transport
19	0	Epinettes	Food	Shop & Service	Outdoors & Recreation	Travel & Transport
17	0	Ecole-Militaire	Food	Travel & Transport	Outdoors & Recreation	Shop & Service
74	0	Salpêtrière	Food	Shop & Service	Travel & Transport	Outdoors & Recreation
54	0	Porte-Dauphine	Outdoors & Recreation	Shop & Service	Food	Travel & Transport
6	0	Bel-Air	Outdoors & Recreation	Food	Travel & Transport	Shop & Service
4	0	Auteuil	Outdoors & Recreation	Arts & Entertainment	Shop & Service	Professional & Other Places
75	1	Sorbonne	Food	Shop & Service	Nightlife Spot	Travel & Transport
63	1	Saint-Georges	Food	Travel & Transport	Nightlife Spot	Arts & Entertainment
24	1	Gallien	Food	Shop & Service	Travel & Transport	Arts & Entertainment
46	1	Palais-Royal	Food	Shop & Service	Travel & Transport	Outdoors & Recreation
22	1	Faubourg-du-Roule	Food	Shop & Service	Travel & Transport	Arts & Entertainment
58	1	Quince-Jingis	Food	Shop & Service	Nightlife Spot	Travel & Transport
50	1	Place-Vendôme	Food	Shop & Service	Travel & Transport	Arts & Entertainment
1	1	Archives	Food	Shop & Service	Arts & Entertainment	Outdoors & Recreation
36	1	Madeline	Food	Shop & Service	Travel & Transport	Outdoors & Recreation
45	1	Odéon	Food	Travel & Transport	Shop & Service	Outdoors & Recreation
13	1	Chaussée-d'Antin	Food	Shop & Service	Travel & Transport	Arts & Entertainment
65	1	Saint-Germain-l'Auxerrois	Food	Shop & Service	Arts & Entertainment	Outdoors & Recreation
11	1	Champs-Élysées	Food	Shop & Service	Arts & Entertainment	Travel & Transport
68	1	Saint-Merri	Food	Shop & Service	Arts & Entertainment	Nightlife Spot
34	2	Javel	Food	Travel & Transport	Shop & Service	Outdoors & Recreation
38	2	Maison-Blanche	Food	Shop & Service	Outdoors & Recreation	Travel & Transport
57	2	Père-Lachaise	Food	Shop & Service	Outdoors & Recreation	Nightlife Spot
42	2	Necker	Food	Travel & Transport	Shop & Service	Outdoors & Recreation

3	Europe	Food	Travel & Transport	Shop & Service	Nightlife Spot	Arts & Entertainment
3	Sainte-Marguerite	Food	Shop & Service	Nightlife Spot	Travel & Transport	Outdoors & Recreation
3	Clignancourt	Food	Nightlife Spot	Shop & Service	Travel & Transport	Outdoors & Recreation
3	Val-de-Grâce	Food	Nightlife Spot	Travel & Transport	Arts & Entertainment	Shop & Service
3	Grandes-Carrières	Food	Nightlife Spot	Outdoors & Recreation	Shop & Service	Travel & Transport
4	Saint-Thomas-d'Aquin	Food	Shop & Service	Travel & Transport	Arts & Entertainment	Outdoors & Recreation
4	Saint-Gervais	Food	Shop & Service	Nightlife Spot	Outdoors & Recreation	Arts & Entertainment
4	Saint-Victor	Food	Nightlife Spot	Outdoors & Recreation	Arts & Entertainment	Travel & Transport
4	Sainte-Avoie	Food	Shop & Service	Nightlife Spot	Arts & Entertainment	Outdoors & Recreation
4	Saint-Germain-des-Prés	Food	Shop & Service	Travel & Transport	Nightlife Spot	Outdoors & Recreation
4	Saint-Ambroise	Food	Nightlife Spot	Shop & Service	Arts & Entertainment	Travel & Transport
4	Monnaie	Food	Shop & Service	Nightlife Spot	Outdoors & Recreation	Travel & Transport
4	Rochechouart	Food	Travel & Transport	Shop & Service	Nightlife Spot	Arts & Entertainment
4	Arts-et-Métiers	Food	Nightlife Spot	Shop & Service	Arts & Entertainment	Travel & Transport
4	Batignolles	Food	Travel & Transport	Nightlife Spot	Shop & Service	Outdoors & Recreation
4	Bonne-Nouvelle	Food	Nightlife Spot	Shop & Service	Arts & Entertainment	Travel & Transport
4	Chailot	Food	Travel & Transport	Shop & Service	Nightlife Spot	Arts & Entertainment
4	Enfants-Rouges	Food	Shop & Service	Nightlife Spot	Arts & Entertainment	Travel & Transport
4	Faubourg-Montmartre	Food	Travel & Transport	Nightlife Spot	Shop & Service	Arts & Entertainment
4	Folie-Méricourt	Food	Nightlife Spot	Shop & Service	Travel & Transport	Arts & Entertainment
4	Gros-Caillois	Food	Travel & Transport	Shop & Service	Nightlife Spot	Outdoors & Recreation
4	Halles	Food	Shop & Service	Nightlife Spot	Arts & Entertainment	Outdoors & Recreation
4	Hôpital-Saint-Louis	Food	Nightlife Spot	Outdoors & Recreation	Shop & Service	Travel & Transport
4	Mail	Food	Nightlife Spot	Shop & Service	Arts & Entertainment	Outdoors & Recreation
4	Notre-Dame	Food	Outdoors & Recreation	Shop & Service	Nightlife Spot	Travel & Transport
4	Notre-Dame-des-Champs	Food	Travel & Transport	Shop & Service	Arts & Entertainment	Nightlife Spot
4	Porte-Saint-Denis	Food	Nightlife Spot	Arts & Entertainment	Travel & Transport	Shop & Service
4	Porte-Saint-Martin	Food	Shop & Service	Nightlife Spot	Arts & Entertainment	Travel & Transport
4	Roquette	Food	Nightlife Spot	Shop & Service	Arts & Entertainment	Travel & Transport
4	Vivienne	Food	Shop & Service	Nightlife Spot	Outdoors & Recreation	Arts & Entertainment



Map with Young Ratio

Conclusions

- ▶ I would suggest my friend to setup his offices in the neighborhoods of the cluster n°4
- ▶ However, by using the actual young ratio we can see that is not always right and neighborhoods with a high young ration may be labelled with a different cluster.
- ▶ I hypothesized that the most attractive categories for young people are Food, Nightlife Spots and Outdoors & Recreation. This is maybe not the case
- ▶ I have excluded important criteria like price of housing which are probably very important for young people to select a neighborhood
- ▶ The number of venues from Foursquare was low for some neighborhoods which could have an impact on our analyses. Furthermore, the Food category was overrepresented.

Future directions

- ▶ In order to better predict the best neighborhood, I would try to run a study in order to collect important criteria for young people when selecting a neighborhood.
- ▶ As well I would try to augment the data set with price of housing.
- ▶ Finally I would try another venues provider (like google map) to get more accurate venues information