

Capstone Project - LV

The Battle of Neighborhoods (Week 2)

In order to use the resources of Foursquare, I propose to simulate a search for the best situation if I want to visit the capital of a country in the world.

Perhaps making an App or a Website to choose a city with the associated with a Foursquare data to make a choice to find the best location. Evidently some actions will be added as the date and a budget for a journey. But now, let's go to analyse the data ...

Activités à découvrir à Paris				Activités à découvrir à Washington			
Tour Eiffel Tour du XIXe siècle de 324 m de haut	Musée du Louvre Ancienne forteresse et résidence royale	Cathédrale Notre-Dame de Paris Église gothique célèbre en littérature	Arc de triomphe de l'Étoile Arc de triomphe, monument national	Capitole des États-Unis Célèbre siège du Congrès des États-	Maison-Blanche Résidence du Président des États-	Lincoln Memorial Monument en hommage au	National Mall Monument et parc
Activités à découvrir à Rome				Activités à découvrir à Londres			
Colisée Ancien amphithéâtre romain emblématique	Basilique Saint-Pierre Plus grande basilique du monde	Forum Romain Vestiges du cœur de l'Empire romain	Panthéon Église et tombeaux historiques romains	Big Ben Horloge emblématique de Londres	London Eye Célèbre grande roue bordant le fleuve	British Museum Caverne aux trésors de tout historien	Palais de Buckingham Résidence royale, appartements officiels

Here are in stages and with the support of the data searches carried out in my Notebook the realization of my project ([https://eu-gb.dataplatform.ibm.com/analytics/notebooks/v2/ef4a7de2-aefd-446d-bd2e-c3da?context=analytics](https://eu-gb.dataplatform.ibm.com/analytics/notebooks/v2/ef4a7de2-aefd-446d-bd2e-c3da2bad01ec?projectid=9461fc15-0847-445e-9822-b697ee9fe717&context=analytics) OR <https://eu-gb.dataplatform.ibm.com/analytics/notebooks/v2/ef4a7de2-aefd-446d-bd2e-c3da>)

STEP 1:

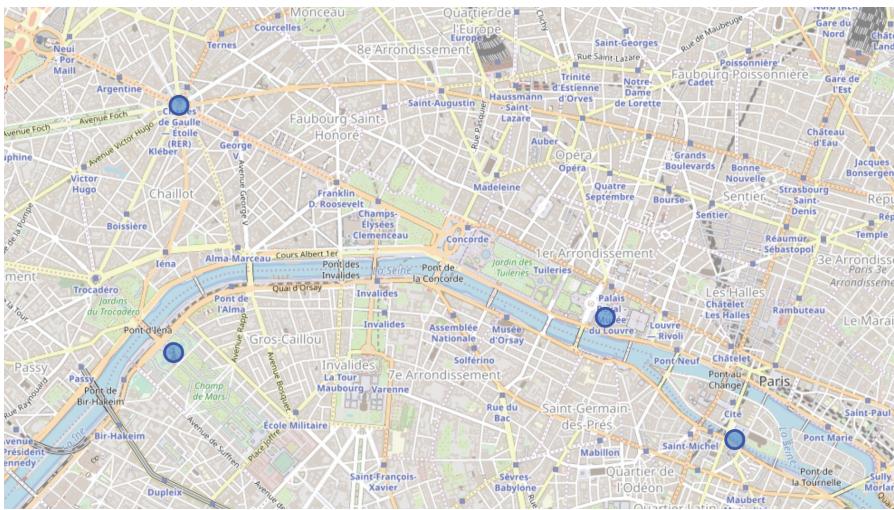
For this analyse, I choose to begin with the capital of France : Paris. I search : «Paris + tourist + places»

With this query, Google give the first 4 places according to the quality rating.

(For the website the integration of this Api would be great. With this, We could access for any other city in the world : https://www.google.fr/destination/map/topsights?q=paris+tourist+places&site=search&output=search&-dest_mid=/m/05qtj&sa=X&ved=0ahUKEwiohPO17IL-dAhUPVhoKHddrC1kQ6tEBCCwoBDAA)

At the moment and for simplicity, I create the data file to simplify with the first four places.

	Lieu	Latitude	Longitude
0	Musée du Louvre	48.860611	2.335450
1	Notre Dame de Paris	48.852968	2.347708
2	Arc de Triomphe	48.873792	2.295028
3	Tour Eiffel	48.858370	2.294481



STEP 2 :

Location on the map of Paris :
Arc de Triomphe, Musée du Louvre, Tour Eiffel,
Cathédrale Notre-Dame de Paris.

STEP 3 :

To be sure of the choice of google, check the quality of the rating with Foursquare. Rather good result with a plus for the Eiffel Tower (38% average)

STEP 4 :

Let's search for each location the main places listed by Foursquare. This table finds 345 places.

STEP 5 :

By this histogram have highlighted the proportion in each places. It's pretty homogeneous. For the Eiffel Tower, it is understood that it is logical view where it is located in Paris. We can already point us to one place more than another.

STEP 6 :

The table analyzes the top 10 addresses in each place is very interesting because it will tell us the trends of each neighborhood. More hotel near the Arc de Triomphe, and a lot of French restaurant at the Eiffel Tower. This can help us for the planning of the visits of this city

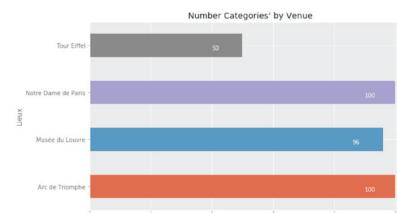
Venue : Cathédrale Notre-Dame de Paris
Rating : 9.6
Total Tips : 945
Nb Likes : 57
Nb Likes / Total Tips 6.031746031746032

Venue : Musée du Louvre
Rating : 9.5
Total Tips : 2134
Nb Likes : 167
Nb Likes / Total Tips 7.825679475164011

Venue : Tour Eiffel
Rating : 9.5
Total Tips : 2446
Nb Likes : 937
Nb Likes / Total Tips 38.30744071954211

Venue : Arc de Triomphe
Rating : 9.6
Total Tips : 687
Nb Likes : 103
Nb Likes / Total Tips 14.992721979621543

Lieux	Lieux Latitude	Lieux Longitude	Venue	Venue id	Venue Latitude	Venue Longitude	Venue Category
0 Musée du Louvre	48.860611	2.335450	Musée du Louvre	4adcd10f964a520af3521e3	48.860847	2.336440	Art Museum
1 Musée du Louvre	48.860611	2.335450	La Vénus de Milo (Vénus de Milo)	5864efb745c3ed1e7d88e96d	48.861100	2.335863	Exhibit
2 Musée du Louvre	48.860611	2.335450	Cour Carrée du Louvre	4c079d740ed3c928bebe797d	48.860360	2.338543	Plaza
3 Musée du Louvre	48.860611	2.335450	Mona Lisa La Joconde	56f279c4cd10850a585f5e31	48.860139	2.335337	Exhibit
4 Musée du Louvre	48.860611	2.335450	Carousel du Louvre	4adcd1df964a5202e3921e3	48.861764	2.334344	Shopping Mall
5 Musée du Louvre	48.860611	2.335450	Cour Napoléon	5072efeb7e4b0c34b5146e7fd	48.861172	2.335088	Plaza
6 Musée du Louvre	48.860611	2.335450	Place du Palais Royal	4b071505f964a520dcf622e3	48.862523	2.336680	Plaza
7 Musée du Louvre	48.860611	2.335450	Café Marly	4adcd04f964a520503221e3	48.861596	2.335676	Café
8 Musée du	48.860611	2.335450	La Maison du Chocolat	A-918f4112-nn4790shRw4	48.861117	2.334129	Chocolate



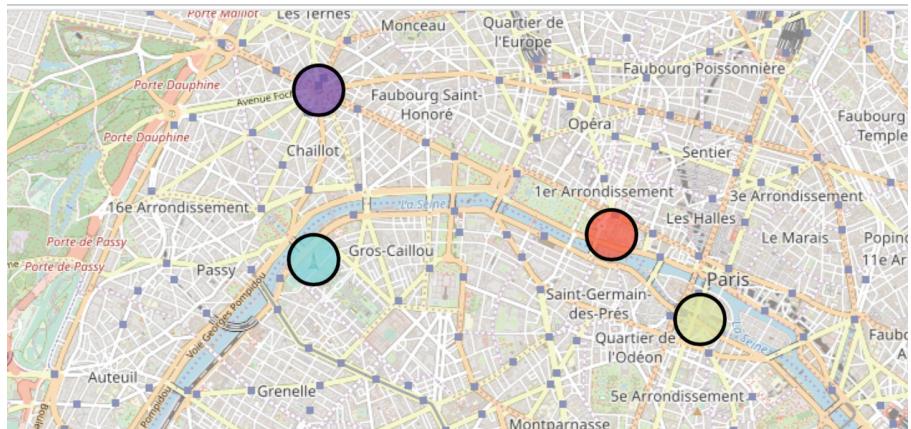
----Arc de Triomphe----		----Notre Dame de Paris----	
venue	freq	venue	freq
0 Hotel	0.30	0 French Restaurant	0.15
1 French Restaurant	0.14	1 Bookstore	0.06
2 Italian Restaurant	0.06	2 Hotel	0.05
3 Jewelry Store	0.03	3 Bar	0.04
4 Bakery	0.03	4 Plaza	0.04
5 Nightclub	0.03	5 Historic Site	0.03
6 Thai Restaurant	0.02	6 Japanese Restaurant	0.03
7 Coffee Shop	0.02	7 Mexican Restaurant	0.03
8 Men's Store	0.02	8 Burger Joint	0.03
9 Sandwich Place	0.02	9 Toy / Game Store	0.02

----Musée du Louvre----		----Tour Eiffel----	
venue	freq	venue	freq
0 French Restaurant	0.12	0 French Restaurant	0.26
1 Hotel	0.08	1 Italian Restaurant	0.10
2 Plaza	0.07	2 Hotel	0.06
3 Café	0.06	3 Café	0.06
4 Coffee Shop	0.04	4 Garden	0.04
5 Historic Site	0.04	5 Plaza	0.04
6 Exhibit	0.04	6 Bakery	0.04
7 Cosmetics Shop	0.03	7 Bistro	0.04
8 Japanese Restaurant	0.03	8 Chinese Restaurant	0.02
9 Bistro	0.02	9 Grocery Store	0.02

Lieux	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0 Arc de Triomphe	Hotel	French Restaurant	Italian Restaurant	Nightclub	Jewelry Store	Bakery	Sandwich Place	Thai Restaurant	Coffee Shop	Movie Theater
1 Musée du Louvre	French Restaurant	Hotel	Plaza	Café	Historic Site	Exhibit	Coffee Shop	Japanese Restaurant	Cosmetics Shop	Bistro
2 Notre Dame de Paris	French Restaurant	Bookstore	Hotel	Bar	Plaza	Japanese Restaurant	Burger Joint	Historic Site	Mexican Restaurant	Comic Shop
3 Tour Eiffel	French Restaurant	Italian Restaurant	Hotel	Café	Bakery	Garden	Bistro	Plaza	Theme Park Ride / Attraction	Bus Stop

STEP 7 :

Performing a clustering to visualize the groups of the highest rated activity close to the places concerned. It is actually a concentrate of the information already obtained that may allow to affirm the results.



	Lieux	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	C
0	Musée du Louvre	48.860611	2.335450	0	French Restaurant	Hotel	Plaza	Café	Historic Site	Exhibit	Coffee Shop	Japanese Restaurant	Cosmetics Shop	B
1	Notre Dame de Paris	48.852968	2.347708	3	French Restaurant	Bookstore	Hotel	Bar	Plaza	Japanese Restaurant	Burger Joint	Historic Site	Mexican Restaurant	C S
2	Arc de Triomphe	48.873792	2.295028	1	Hotel	French Restaurant	Italian Restaurant	Nightclub	Jewelry Store	Bakery	Sandwich Place	Thai Restaurant	Coffee Shop	M T
3	Tour Eiffel	48.858370	2.294481	2	French Restaurant	Italian Restaurant	Hotel	Café	Bakery	Garden	Bistro	Plaza	Theme Park Ride / Attraction	B

Cluster 0 : Musée du louvre

```
: paris_merged.loc[paris_merged['Cluster Labels'] == 0, paris_merged.columns[[1] + list(range(5, paris_merged.shape[1]))]]
```

```
1: 
```

	Latitude	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	48.860611	Hotel	Plaza	Café	Historic Site	Exhibit	Coffee Shop	Japanese Restaurant	Cosmetics Shop	Bistro

Cluster 1 : Arc de Triomphe

```
: paris_merged.loc[paris_merged['Cluster Labels'] == 1, paris_merged.columns[[1] + list(range(5, paris_merged.shape[1]))]]
```

```
1: 
```

	Latitude	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
2	48.873792	French Restaurant	Italian Restaurant	Nightclub	Jewelry Store	Bakery	Sandwich Place	Thai Restaurant	Coffee Shop	Movie Theater

Cluster 2 : Tour Eiffel

```
: paris_merged.loc[paris_merged['Cluster Labels'] == 2, paris_merged.columns[[1] + list(range(5, paris_merged.shape[1]))]]
```

```
1: 
```

	Latitude	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
3	48.85837	Italian Restaurant	Hotel	Café	Bakery	Garden	Bistro	Plaza	Theme Park Ride / Attraction	Bus Stop

Cluster 3 : Notre Dame de Paris

```
: paris_merged.loc[paris_merged['Cluster Labels'] == 3, paris_merged.columns[[1] + list(range(5, paris_merged.shape[1]))]]
```

```
1: 
```

	Latitude	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	48.852968	Bookstore	Hotel	Bar	Plaza	Japanese Restaurant	Burger Joint	Historic Site	Mexican Restaurant	Comic Shop

What is very interesting is these results by zone.

This structures the place well on what can be found in each place.

For Cluster 0, the Louvre Museum, a place to visit and cafes.

Cluster 1, the Arc de Triomphe in addition to hotels already mentioned there are nightclubs, theater etausi restaurants

For the 2, the Eifel Tower, can of course if not parks and restaurants, bistros.

For the last Cluster that of Notre Dame, booksstores and restaurants.

Knowing the neighborhood I can add that it is obviously the student district of paris. This explains.

STEP 8:

Foursquare also allows you to find reviews left by users. This can be interesting to confirm analyzes extracted from tables on the interest of a place.

I would take for example the Eiffel Tower which seems relevant to me. The extraction of a comment also suggests that visit this place at night and a good idea and can even be dinner at «Jules Verne» a restaurant on the second floor of the Eiffel Tower!

	name	categories	lat	lng	id
0	Tour Eiffel	Monument / Landmark	48.858249	2.294426	51a2445e019c80b56934c75
1	Le Jules Verne	French Restaurant	48.858245	2.294530	4b5972b9f964a5208b882e83
2	Restaurant 58 Tour Eiffel	French Restaurant	48.858387	2.294067	e078807e4cdefcf8dce4f6
3	Bar à Champagne de la Tour Eiffel	Champagne Bar	48.858313	2.294411	4d5537db4d4ebf17d141037a
4	Carrousel de la Tour Eiffel	Theme Park Ride / Attraction	48.858972	2.292631	4dab1ab0fa8cc76497446ba89
5	Residence Charles Floquet	Hotel	48.856306	2.294318	54c5734598e47f3d60203c7
6	Musée du Quai Branly – Jacques Chirac	Art Museum	48.860849	2.297423	4adcdca10964a520ae3521e3
7	Hôtel Pullman Paris Tour Eiffel	Hotel	48.855791	2.292605	4c0f74e2d64c0f479fb295d
8	Capriccio Sorrentino	Italian Restaurant	48.859208	2.297896	50b60a4ee4b0c55f394ce7ea
9	Bistrot de la Tour Eiffel	Bistro	48.859305	2.297612	4ccdf950e2dc437041830cf08
10	Boutique officielle - Tower Tour	Gift Shop	48.858357	2.294471	575886a5498ee35ef771349
11	Brasserie de la Tour Eiffel	Brasserie	48.860356	2.295609	4d8911dc6daeb60c8eaaf47e0
12	CIDJ	Library	48.856177	2.290777	4c36e804ae2da5931eefdc5
13	Les Ombres	French Restaurant	48.861096	2.298525	4adcdca14f964a520f03621e3
14	Au Bon Accueil	French Restaurant	48.859608	2.299448	4adcdca13f964a520b23621e3
15	Parc du Champ de Mars (Jardin du Champ-de-Mars)	Garden	48.855567	2.298760	4b0d54cb964a5207764623e3
16	Alfio	Italian Restaurant	48.857900	2.299680	4b90d49f964a520d39d33e3

Rating : 9.5

Total Tips : 2446

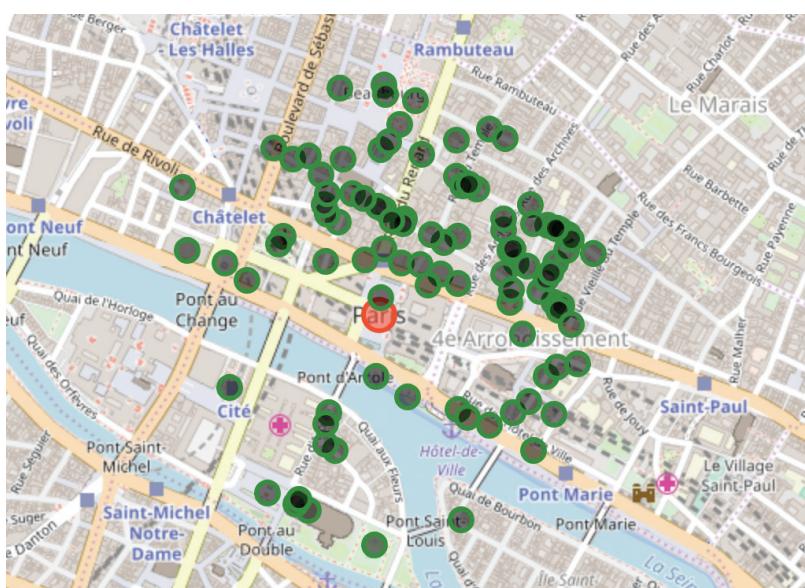
Nb Likes : 937

Nb Likes / Total Tips 38.30744071954211

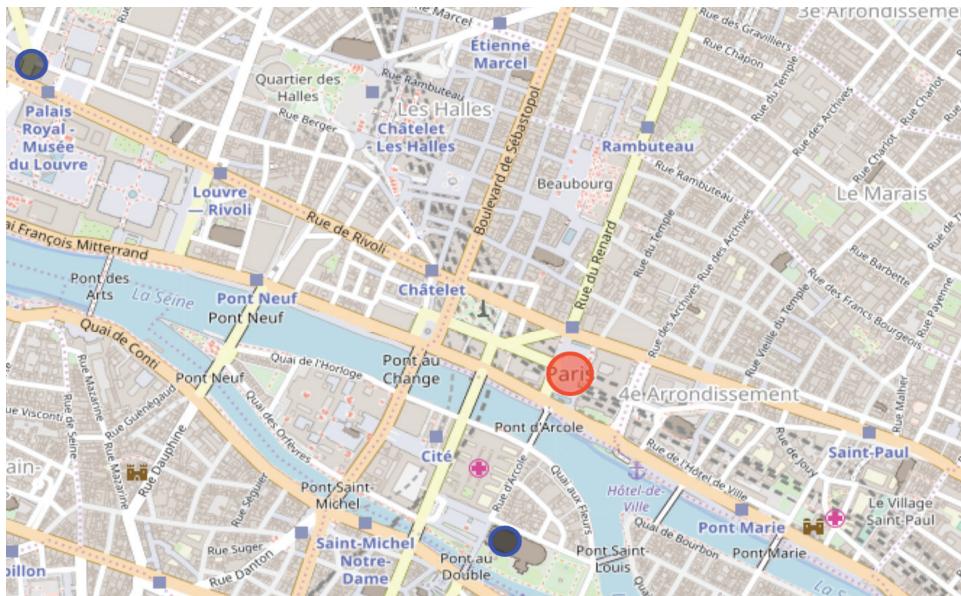
	text	agreeCount	disagreeCount		id	user.firstName	user.lastName	user.gender	user.id
0	The views at night was the best. You can either catch a lift to the top or brave taking the stairs. Dining at one of the two on-site restaurants is a must do and made it a trip to remember.	23	0	583cb3b95da8f465d21b9c0b	Lina	Bell		female	11728894

STEP 9:

Trend research in a neighborhood is also a good opportunity to locate the center of interest of this place. Visually, it's nice to see WordCloud's trend through words. A map also makes it possible to clearly visualize the concentrations or not of the centers of attractions (Hotels, restaurant, coffee, shops, etc.) thanks to the data of Foursquare



		name	categories
0	Place de l'Hôtel de Ville – Esplanade de la Libération	Plaza	
1	BHV Marais	Department Store	
2	L'Alsacien	Alsatian Restaurant	
3	LUSH	Cosmetics Shop	
4	Häagen-Dazs	Ice Cream Shop	
5	Paris Rendez-Vous	Souvenir Shop	
6	Tour Saint-Jacques	Historic Site	
7	Square de la Tour Saint-Jacques	Park	
8	Berges de Seine – Rive droite	Pedestrian Plaza	
9	Galerie Azeddine Alaïa	Art Gallery	
10	Maison Aleph	Pastry Shop	
11	Le Perchoir du Marais	Cocktail Bar	
12	BHV Marais – L'Homme	Men's Store	



STEP 10:

For a punctual refinement, this map makes it possible to precisely locate the trendy places in this district. Obviously, it is a map that can change from days to days according to the users of Foursquare. Here, we are located in the cathedral district of Notre Dame de Paris.

	name	categories	location.distance	location.city	location.postalCode	location.state	location.country	location.lat	location.lng
0	Café RUC	Coffee Shop	1372	Paris	75001	Île-de-France	France	48.863083	2.335545
1	Cathédrale Notre-Dame de Paris	Church	413	Paris	75004	Île-de-France	France	48.853124	2.349561

Conclusion

Here is the end of the data analysis and comment about information.

It is possible to rework some chart, but I think I already have enough result to make a conclusion.

With Foursquare, I was able to do a lot of analysis thanks to the available data. Thanks to the users of this service, it is really possible to generate interesting analyzes and to expose them to offer other services.

With this research, one can, by examining the obtained results, to make a schedule for a stay. For example, find a hotel around the Arc de Triomphe. Leave this walk towards the Cathedral Notre Dame by stopping first at the Louvre Museum to visit and lunch. We arrive at the cathedral then and we discover this district of the old Paris. To conclude this day, a dinner at Jules Verne, the restaurant of the second floor of the Eiffel Tower. A magnificent view of Paris. And to end this day, Theater or nightclub next to the Arc de Triomphe ...

Well, it's pretty cool and all this after observing and analyzing all these.

The example for this capital Paris can also be realized for the other three. It is also interesting that we can compare to each other. Other factors could be added such as weather and cost depending on the time of the year chosen...

Thank you for following me in my analysis.