2 hours @Paris :

A good place for after work by district

1. Introduction

1.1 Background

Paris is the most visited city over the world by the international traveler, but in fact, the name of Paris means two different geographic definitions for the local people:

- For the Paris city heart : the real city heart 105KM² with 20 districts (in French, arrondissement)
- For the Big Paris city: the 20 districts and the department 92/93/94 (in French, Paris petite couronne)

The most of CBDs around Paris city heart are located in the 92/93/94 department. For the people who work around Paris, even the urban is well developed, the city heart remain always the most popular place for their afterwork/team building: because of the historical place, more choice for café, bar and restaurant, much more approach to the theater, cinema, park and the Seine river…

1.2 Problem

The 92/93/94 departements make a circle around Paris, thus the data can help the people who works there to know where to go for the afterwork/team building, according the city heart district that they choose, probably it can be

- the district next to where they work
- a place approach to somewhere specifically chosen

The project aims to locate, a good place for the after work place by district, in order to meet business request. Here what I think as 3 examples:

- For who works at La Défense, choose a best noted bar nearby Arc de Triomphe.
- For who wish to organize a team building in a park then to restaurant along the Seine river , where to go.
- For business partners leave Paris how to organize a 2 hours small trip with a drink nearby CDG airport or 4 main railway stations.

2. Data

2.1 Data request

To solve the problem, we will need the data described as below:

- List of neighborhood in Paris: the first step is to list the districts from 1-20, based on the Paris city heart location. With this scope, the city heart was defined and then all of the interest place could be found as the landmarks.
- List of latitude and longitude which coordinates of the interest place. This step need plot the map.
- Base on the latitude and longitude, the venue data is essential
- The last step is to perform the clustering, in order to give the conclusion.

2.2 Data source

- The Wikipedia source:

https://en.wikipedia.org/wiki/Arrondissements_of_Paris#Arrondissements

- The Paris city open data :

https://opendata.paris.fr/page/home/

This is a very interesting and powerful open source data base for Paris city. Many developer works on it and the user can get the all needed format data on it, as for this project, I use the city's GEOJSON.

- The foursquare :

The foursquare API can be used for the venue data. The site is one of the largest database of more than 100Millions places worldwide and is used by over 130 000 developers. In this project, the Paris city venue data will be explored based on the interest place

2.3 Data preparation:

Dear Peer reviewer: here I take some screenshot for several step already done to show you the data step, BUT IT IS THE WEEK 5 ASSIGNMENT, I will show the complete package in the notebook when the whole coding is finished:

Here I use the wikipedia link to get the Paris information

[2]:
```
url = requests.get('https://en.wikipedia.org/wiki/Arrondissements_of_Paris#Arrondissements'
```

[3]:
```
# save the script for variable or mapping searching
soup = BeautifulSoup(url, 'lxml')
```

```
information = []
for row in arrond_table_rows:
    info = row.text.split('\n')[1:-1]
    information.append(info)
del information[0][1::2]
information
```

```
 'Mayor'],
['1st (Ie) R',
 'Louvre',
 '1.826\xa0km2 (0.705\xa0sq\xa0mi)',
 '16,888',
 '17,700',
 '9,693',
 'before 1861',
 'Jean-François Legaret'],
['2nd (IIe) R',
 'Bourse',
```

[7]:
```
# creation dataframe to have in columns the detailed informations by districts
arrond_df = pd.DataFrame(information[1:], columns=information[0])
arrond_df.head()
```

[7]:

	Arrondissement (R for Right Bank, L for Left Bank)	Name	Area (km2)	Population(March 1999 census)	Population(July 2005 estimate)	Density (2005) (inhabitants per km2)	Peak of population
0	1st (Ie) R	Louvre	1.826 km2 (0.705 sq mi)	16,888	17,700	9,693	before 1861