

Sutinan Thanombun

Coursera Capstone project

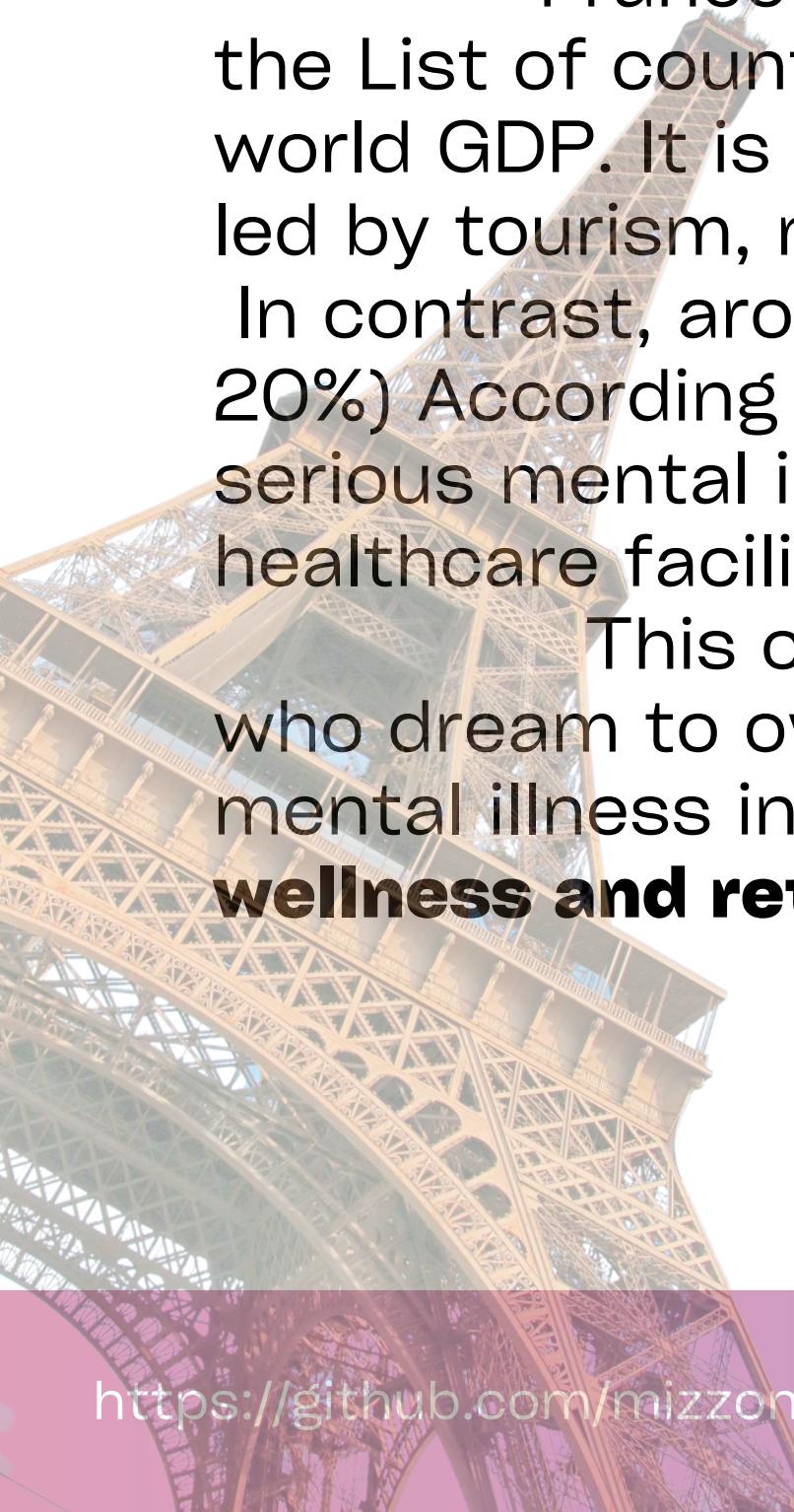
IBM

The battle of neighbourhood : Psychiatric clinic and wellness and retreat.

<https://github.com/mizzony/Capstone-project-Kiki>

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Executive Summary

A faint watermark of the Eiffel Tower is visible on the left side of the slide.

France is the world's seventh-largest economy by 2022 .nominal figures and the List of countries by GDP (PPP)tenth-largest economy by PPP, constituting 3.3% of world GDP. It is the 3rd largest economy of Europe. France's diversified economy is led by tourism, manufacturing, and pharmaceuticals. This is only the beautiful side.

In contrast, around 1 in 5 French people suffer from mental health problems.(that's is 20%) According to Foundation de France, around 3M people in France suffer from a serious mental illness. With report shown below that there is not enough both healthcare facilities and healthcare practitioner to help people who suffer form this.

This could be a proper time for investor, doctor or healthcare practitioner who dream to own business to discover the opportunity to help people suffering with mental illness in the top neibourhood in Paris by **offer more Psychiatric clinic and wellness and retreat center.**

Introduction

According to resource here that said "The World Health Organization rated it as one of the best in the world, and both locals and foreigners regularly attest to the high standard of care received in an efficient and affordable manner" Moreover, WHO records shown people nowadays have higher life expectancy. We want to live longer, live healthier and looking better. The trend "Be the best version of yourself" seems to fit in the modern era now. Thanks to all new advanced healthcare technology and pharmaceutical company.

However, With the higher standard of living it come with the cost. This research shown "Epidemiological studies show high rates of generalised anxiety and drug and alcohol abuse and dependence, greater use of psychoactive medication" With lesser mental health facility (Paris has considerably less adult psychiatry beds and day care places per head of population than the rest of France)

So, our main goal now is **to provide more Psychiatric clinic and wellness center facilities in Paris. We're also focusing on Wellness and Aesthetics here as well, since a lot of wellness program offer treatment to treat earlier anxiety or help individual to rest and find proper care for themselves.**

Business problem

The final goal of this Capstone project is to analyze and offer the best locations(neighbourhoods) in city of Paris to operate Psychiatric clinic. This will be the key for any business, investor, doctor who interest in helping patients -both locals and travelers with mild to severe mental illness like anxiety, Drug addicted , etc. Using Data science methodology and machine learning techniques. This project aims to provide useful solutions to answer the business questions: In the city of Paris. (Focusing on higher density area where **there should be Plaza, Hotel,Art Gallery and Italian Restaurant . For Starting Psychiatric clinic and wellness center business. Top neighbourhood would I recommend it.**

Data collection and Data Wrangling

Data Collection

- List of neighborhoods in Paris using API
- Latitude and longitudes coordinates of the neighbourhoods.
- Venue data, Especially Data related to Plaza(mall), Hotel, Art Gallery and Italian Restaurant

Source of Data

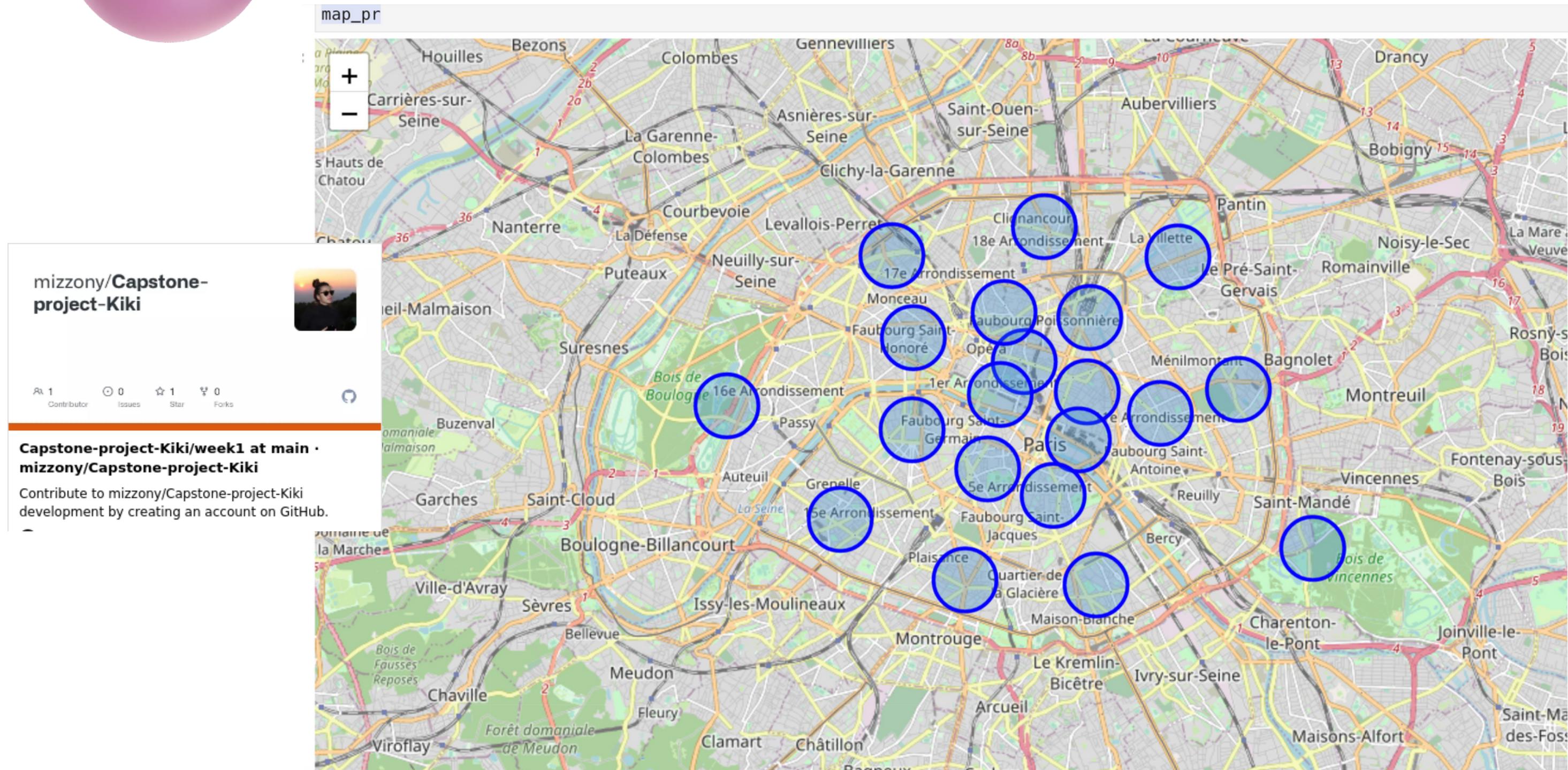
- Wikipedia page for Paris neighbourhoods(Paris map shows the 20 different neighborhoods which are called arrondissements. In Paris arrondissements are named according to their number, which corresponds to an administrative district. For example, you might live in the 5th arrondissement, which would be written as 5ème (or 5e) in French.)>>
<https://en.wikipedia.org/wiki/Paris>
- Geocoder package for latitude and longitude
- Foursquare API for venue information

Methodology

To solve the problems, I use these techniques gathering this data

- Web scraping Wikipedia page for neighbourhoods list (retrieval data from wikipedia <https://en.wikipedia.org/wiki/Paris>)
- Get latitude and longitude coordinates using Geocoder
- Use Foursquare API to get venue data
- Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category
- From Paris map shows overall 20 neighbourhoods which are called arrondissements. Filter only venue that have high density on this category (Plaza, Hotel, and Thai restaurant)

Folium and Foursquare API Visual maps



<https://github.com/mizzony/Capstone-project-Kiki>

EDA and Data Wrangling

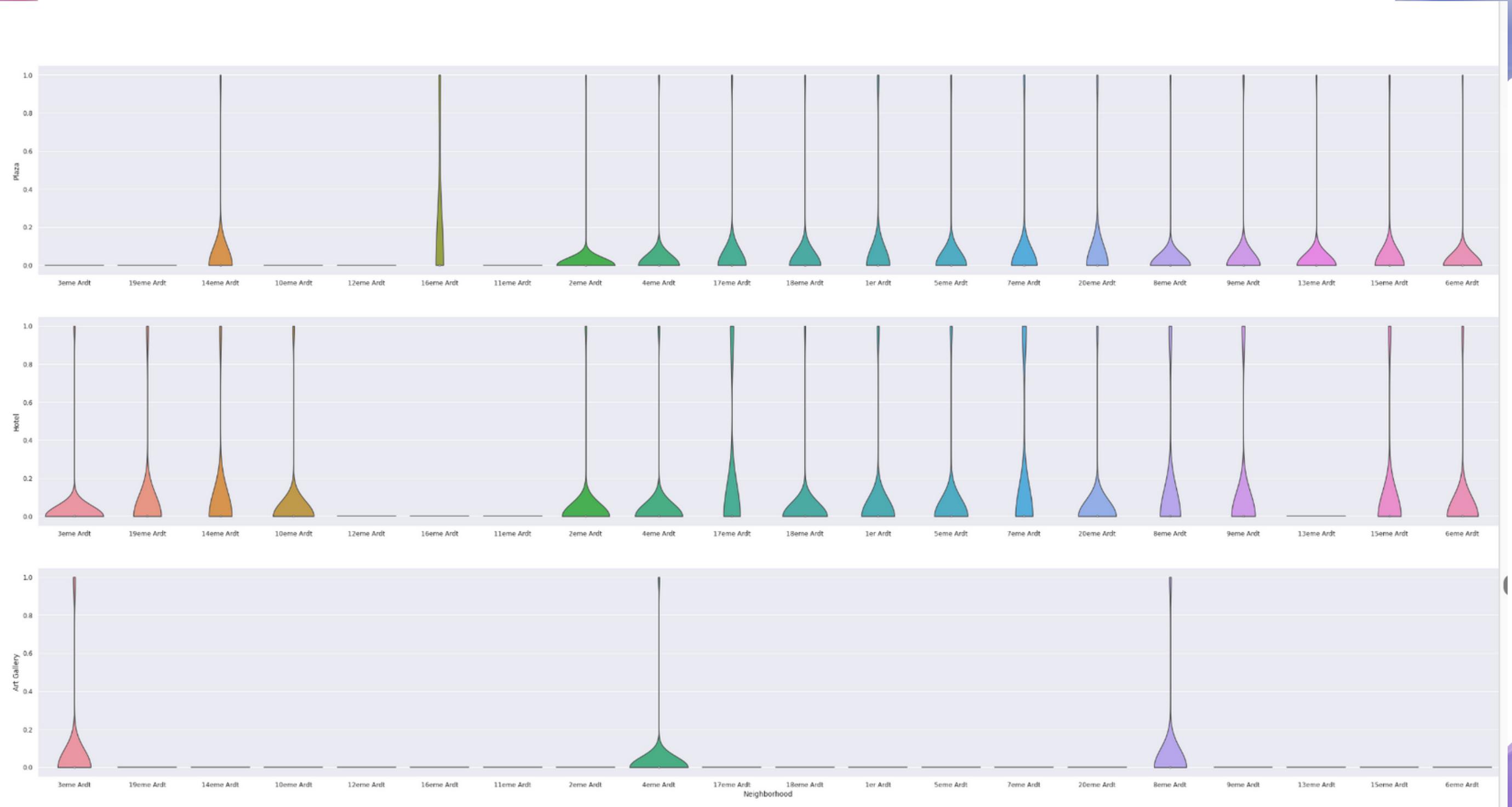
```
### Find out each neighborhood with it's top 15 most common venues ###

36]: # Each neighborhood with top 15 most common venues
      num_top_venues = 15

      for hood in pr_grouped['Neighborhood']:
          print("----"+hood+"----")
          temp = pr_grouped[pr_grouped['Neighborhood'] == hood].T.reset_index()
          temp.columns = ['venue','freq']
          temp = temp.iloc[1:]
          temp['freq'] = temp['freq'].astype(float)
          temp = temp.round({'freq': 2})
          print(temp.sort_values('freq', ascending=False).reset_index(drop=True).head(num_top_venues))
          print('\n')

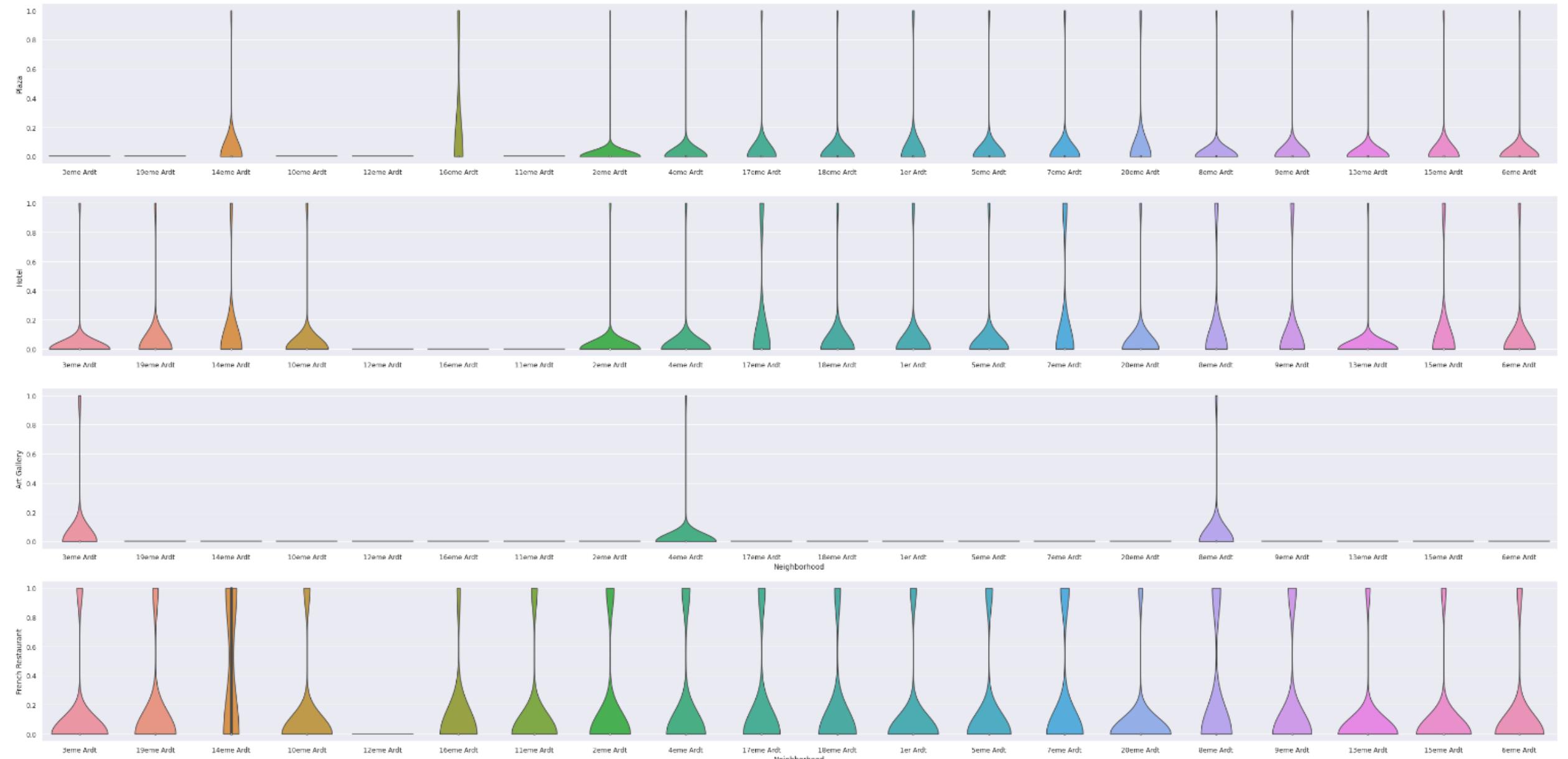
----10eme Ardt----
      venue freq
0 French Restaurant 0.11
1 Bistro 0.07
2 Coffee Shop 0.05
3 Hotel 0.04
4 Café 0.03
5 Wine Bar 0.03
6 Japanese Restaurant 0.03
7 Italian Restaurant 0.03
8 Indian Restaurant 0.03
9 Seafood Restaurant 0.02
10 Restaurant 0.02
11 Burger Joint 0.02
12 Breakfast Spot 0.02
13 Pizza Place 0.02
14 Cocktail Bar 0.02
```

SNS: Seaborn plot



Interactive maps: Add more criteria

Frequency distribution for the top venue categories for each neighborhood (includes French Restaurant)



Result

The winner.

Inferential analysis using the data, as well as domain knowledge of retail and marketing, allow the list to be focussed to just only 2 neighbourhoods from the list. The reasoning being that if the 3 criteria have been met - identifying neighbourhoods that are plenty with Hotel, Plaza and Art Gallery - adding French Restaurant into the mix of stores in the area is a significant bonus. Having some of the same category of stores in the same area - especially in Healthcare division - is very desirable as a investor. which is

4eme Ardt: Hotel-de-ville and

8eme Ardt: Elysee

Conclusions

Findings in these project will help Stakeholder/CEO or business owner better understanding of Paris neibourhoods. It's significantly narrow it down to 2 venues that pass all criteria we've set

References:

expatarrival.com

<https://www.chooseparisregion.org/industries/health-healthtech>

<https://pubmed.ncbi.nlm.nih.gov/16446209/>

Discussion

Recommendations and results based on the data analysis. Discussion of any limitations and how the results can be used, and any conclusions that can be drawn. We may can use this information an apply to other big city in other country like Barcelona, spain or Sydney, Australia.

Recommendation

For further analysis,I also add another criteria which is bookstore to give more dimension to this project.