

An Analysis of Restaurants in Paris, France Based on their Types and Distance from the City Centre

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Paris - The Undisputed Culinary Capital of the World

Introduction

‘Where Do I Eat?’

Paris is certainly one of the best cities for food-culture in the entire Europe. There are abundant choices for various types of gourmet food in the city. There are also Michelin Star-chefs and Michelin star-restaurants. I have personally been to Paris on a number of occasions and have been amazed with the options available in the city. I always want to try out more. And I am sure, all tourists also would be hungry-for-more. One major problem that I have found is the distance of our places of residence in Paris to the locations of these fantastic restaurants. Therefore, I want to find out the correct distances, preferably from a central location, so as to make it easy for everyone and also so that I may be able to use it during my next visit and also share it with the community.

The Project

Startpoint

- ❖ Knowledge gained in Coursera modules
- ❖ Foursquare API for exact locations of all required destinations (i.e. restaurants) in Paris
- ❖ Prepare and test in Jupyter Notebook of IBM Watson
- ❖ Publish it on Github for analysis

The Process



Import All Libraries

```
import numpy as np
import pandas as pd
pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)
import json
from geopy.geocoders import Nominatim # convert an address into latitude and longitude values
import requests # library to handle requests
from pandas.io.json import json_normalize # tranform JSON file into a pandas dataframe
# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors
!pip install folium
import folium
!conda install -c conda-forge geopy --yes
print('All the necessary Libraries are imported.')
```


Locate Paris and Connect to API

- ❖ Obtain the geographical location of Paris (by calling the geo-locator function).
- ❖ Connect to the Foursquare API (using my credentials established in an earlier module).

Raw Data

❖ This is how the raw-data obtained from Foursquare API looks like

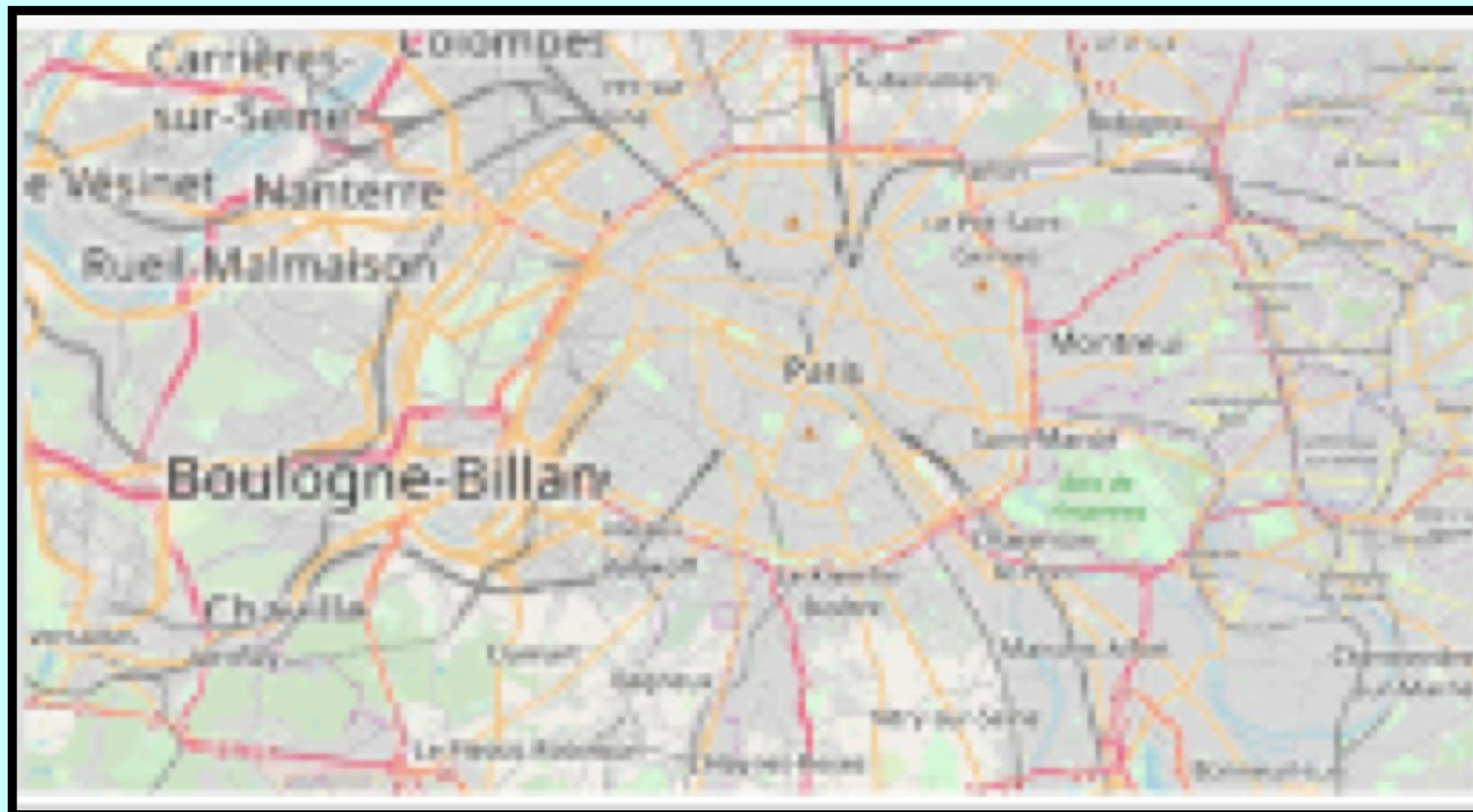
	categories	hasPark	id	location.address	location.cc	location.city	location.country	location.crossStreet	location.distance	location/formattedAddress
0	["id": "4e756dc8d48968d10c041735", "name": "V..."]	False	50445e7e4b0ba0e503e083f	23 rue d'Arcis	FR	Paris	France	NaN	273	[23 rue d'Arcis, 75004 Paris, France]
1	["id": "4e756dc8d48968d10c041735", "name": "V..."]	False	4e2b2d0ed22d0803c86c7009	12 passage Molien	FR	Paris	France	NaN	625	[12 passage Molien, 75003 Paris, France]
2	["id": "4e756dc8d48968d10c041735", "name": "V..."]	False	4cbe06064332afec0bd43905	1 rue de la Légion d'Honneur	FR	Paris	France	NaN	1850	[1 rue de la Légion d'Honneur, 75007 Paris, Fr...]
3	["id": "4e756dc8d48968d10c041735", "name": "V..."]	False	58ab059c68bc49021b313ca9	47 rue Berger	FR	Paris	France	NaN	895	[47 rue Berger, 75001 Paris, France]
4	["id": "4e756dc8d48968d10c041735", "name": "V..."]	False	4d4903ae6544a08570cb27e7	81 rue La Boétie	FR	Paris	France	NaN	1343	[81 rue La Boétie, 75008 Paris, France]

Filtered and Processed Data

	name	categories	address	cc	city	country	crossStreet	distance	formattedAddress	indexedLatLngs	lat	lng	neighborhood	postalCode	state
0	Restaurant Aux Deux de Notre-Dame	French Restaurant	20 rue d'Arcole	FR	Paris	France	NaN	035	[23 rue d'Arcole, 75004 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75004	Île-de-France
1	Le Restaurant des Poires	French Restaurant	12 passage Molitor	FR	Paris	France	NaN	029	[12 passage Molitor, 75003 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75003	Île-de-France
2	Le Restaurant du Musée d'Orsay	French Restaurant	1 rue de la Légion d'Honneur	FR	Paris	France	NaN	100	[1 rue de la Légion d'Honneur, 75007 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75007	Île-de-France
3	Restaurant La Mère Lise	French Restaurant	17 rue Berges	FR	Paris	France	NaN	004	[17 rue Berges, 75001 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75001	Île-de-France
4	Restaurant Au 20	French Restaurant	17 rue La Boétie	FR	Paris	France	NaN	142	[17 rue La Boétie, 75008 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75008	Île-de-France
5	Restaurant de l'Institut du Monde Arabe	Middle Eastern Restaurant	1 rue des Fossés Saint-Bernard	FR	Paris	France	Hôtel du Moyen Âge	065	[1 rue des Fossés Saint-Bernard, Hôtel du Moyen Âge]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75005	Île-de-France
6	Restaurant Hôtel Little Palace	Restaurant	Hôtel Little Palace	FR	Paris	France	4 rue Géonard de Clau	101	[Hôtel Little Palace 4 rue Géonard de Clau, ...]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75003	Île-de-France
7	Restaurant Le Maison de Quentin	French Restaurant	228 rue de Rivoli	FR	Paris	France	Maison de Quentin	100	[228 rue de Rivoli Hôtel Le Maison de Quentin, 75001 Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75001	Île-de-France
8	Restaurant Café Garcia Rivoli	French Restaurant	Hôtel Garcia	FR	Paris	France	228 rue Saint-Honoré	065	[Hôtel Garcia 228 rue Saint-Honoré, Paris, France]	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75001	Île-de-France
	Restaurant	French	1 rue	FR	Paris	France	1 rue	000	[1 rue	[[{"lat": "display", "lng": 48.850022, "type": "display"}, {"lat": 48.850022, "lng": 48.850022, "type": "point"}]]	48.850022	2.349421	NaN	75001	Île-de-France

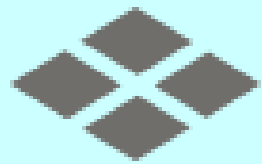
Paris

❖ Using Folium, Paris could be seen.

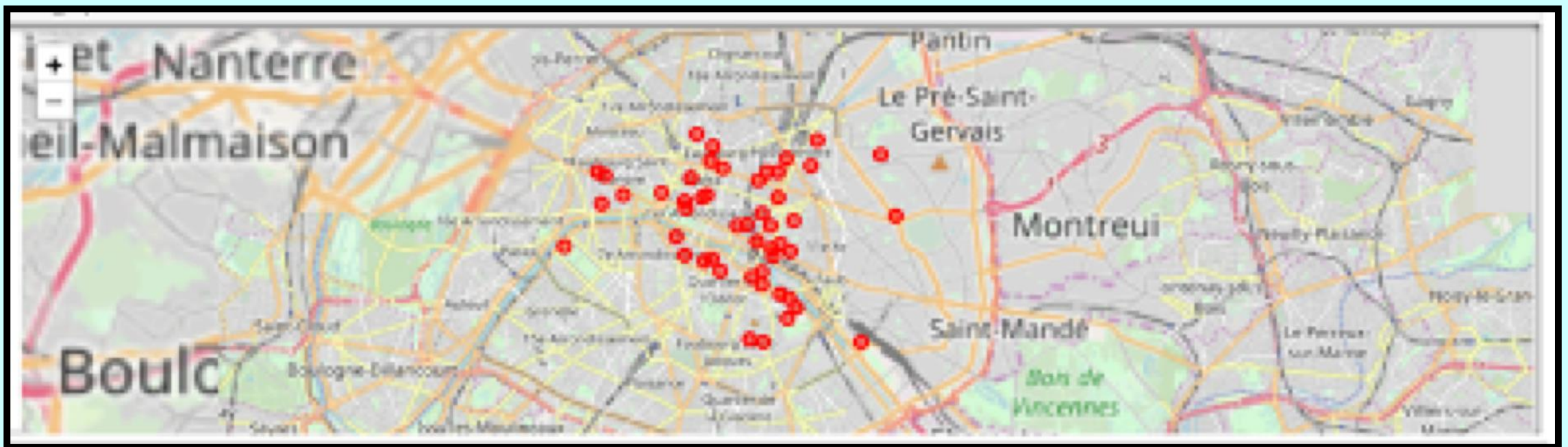


But Where Are The Restaurants?

Restaurants



Now I see them with red markers



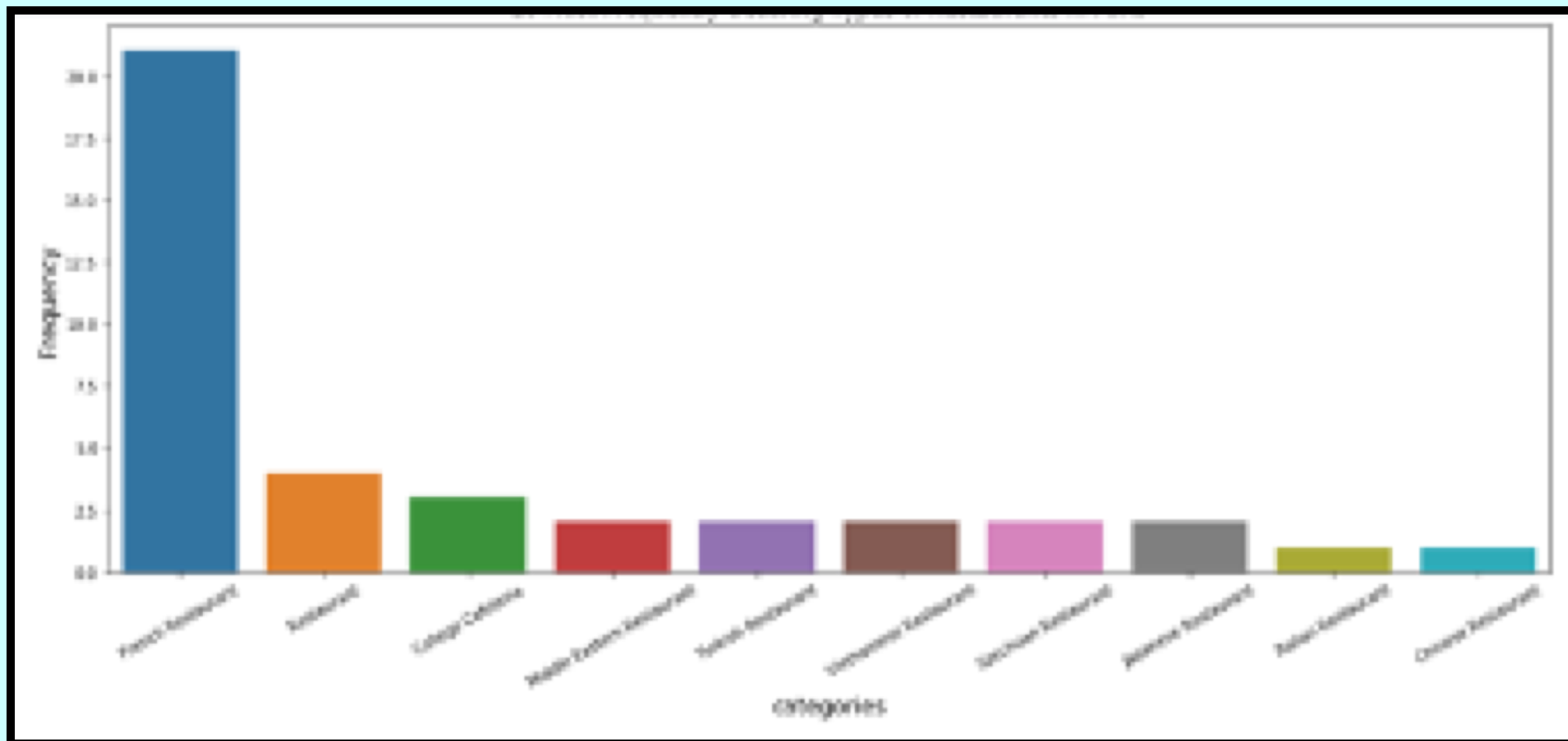
Enter Pandas

- ❖ Using the data frame Paris and getting help from our Pandas

	categories	Frequency
0	French Restaurant	21
1	Restaurant	4
2	College Cafeteria	3
3	Middle Eastern Restaurant	2
4	Turkish Restaurant	2
5	Vietnamese Restaurant	2
6	Szechuan Restaurant	2
7	Japanese Restaurant	2
8	Italian Restaurant	1
9	Chinese Restaurant	1

Converting to Bar Chart

❖ Using Seaborn



Converting to Useable Data



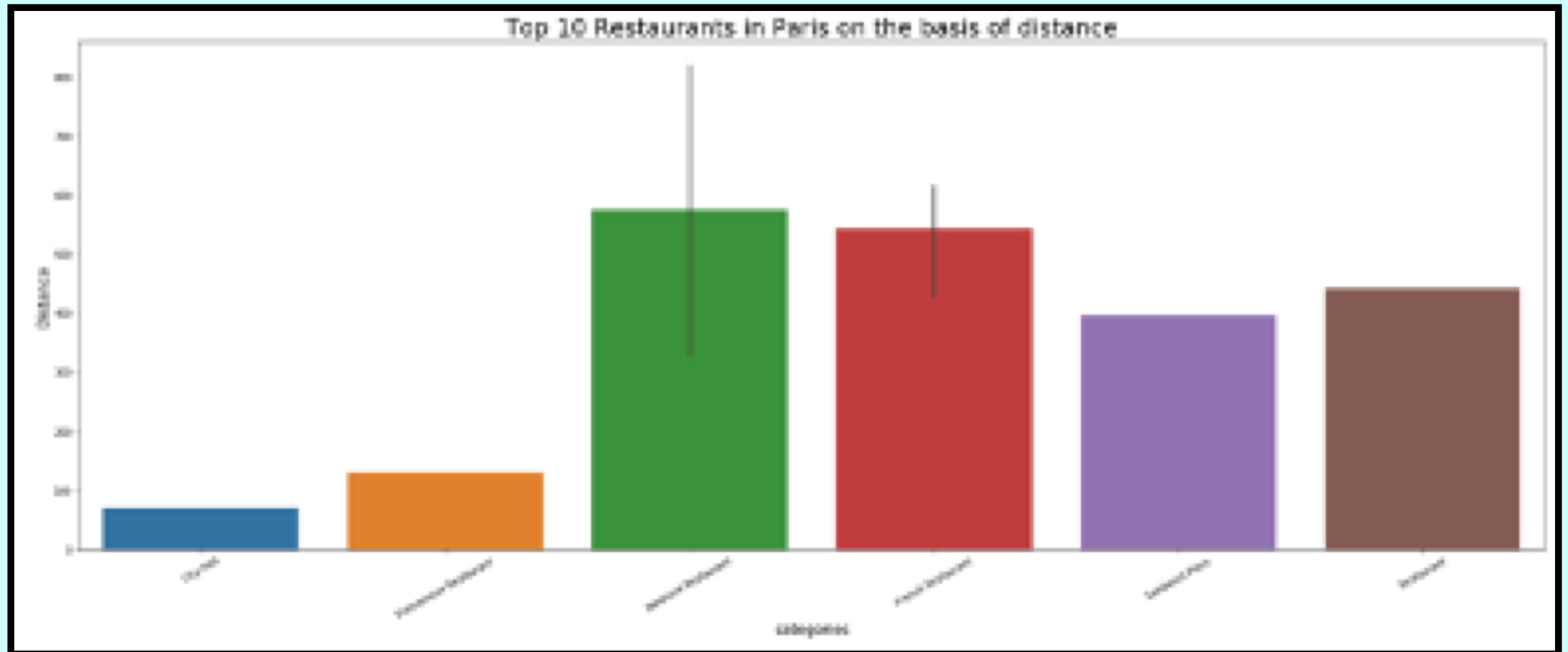
Resetting the Index Frame

index	name	categories	distance
02	Hôtel de Ville de Paris (Hôtel de ville de Paris)	City Hall	71
17	Restaurant Viet	Vietnamese Restaurant	103
06	Restaurant Shiso	Japanese Restaurant	200
9	Restaurant Rue Tour de Notre-Dame	French Restaurant	273
33	Restaurant Istanbul	Sandwich Place	299
48	Jeja Restaurant 5 Rue Sainte-Croix	Restaurant	440
18	Restaurant Jardin Notre-Dame	French Restaurant	573
42	Restaurant Les Degres de Notre Dame	French Restaurant	600
2	Le Restaurant des Poires	French Restaurant	625
40	Restaurant Ai	Japanese Restaurant	800
01	Restaurant La Gier	French Restaurant	860
38	Restaurant Ebi	French Restaurant	885
4	Restaurant Le Moss Lisa	French Restaurant	895
5	Restaurant de l'Institut du Monde Arabe	Middle Eastern Restaurant	900
39	Restaurant Le Luig	Italian Restaurant	1088
19	Restaurant administratif	Restaurant	1188
15	Le Restaurant de l'Hôtel	French Restaurant	1197
8	Restaurant Hotel Little Palace	Restaurant	1205
6	Restaurant Au 55	French Restaurant	1340
14	Restaurant universitaire Cours de Censier	College Cafeteria	1353

The Result

index		name	categories	distance
32	32	Hôtel de Ville de Paris (Hôtel de ville de Paris)	City Hall	71
17	17	Restaurant Viet	Vietnamese Restaurant	131
36	36	Restaurant Shiao	Japanese Restaurant	330
0	0	Restaurant Aux Tours de Notre-Dame	French Restaurant	373
33	33	Restaurant Istamboul	Sandwich Place	386
49	49	Jaja Restaurant 3 Rue Sainte-Croix	Restaurant	443
18	18	Restaurant Jardin Notre-Dame	French Restaurant	573
42	42	Restaurant Les Degrés de Notre Dame	French Restaurant	603
2	2	Le Restaurant des Poètes	French Restaurant	626
40	40	Restaurant AT	Japanese Restaurant	820

The Result



Conclusion

❖ Whenever I visit any new country, where to stay and where to eat are always issues in front of me. I am sure, it is the same for maximum tourists. Here, I have focussed on the where to eat part of the issue. I am certain that every tourist would like to have such information at hand so as to use his time and, more importantly, his money in an optimal manner. Comparing the two bar-graphs, this looks more user friendly. It can be ascertained that Vietnamese, Japanese, French and Sandwich Place are the most suitable restaurants, based on distance from the centre, in Paris.



Thank you