

Vienna City Guide: the guide to Vienna districts and restaurants

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1.0 Introduction

Each of the 23 Vienna districts display a distinctive character that attracts millions of visitors each year. The capital of Austria does not only have impressive libraries, atmospheric cafes, beautiful palaces, museums and galleries, but also delicious food.

In this project we will explore types of restaurants that exist in Vienna's districts and provide a guide to visitors looking for their favorite dishes. In particular, we will compare Vienna's 23 districts in order to discover which types of restaurants are most likely to be found in each of the 23 districts. Our target audience are primarily tourists and people coming to study in Vienna.

2.0 Data

2.1 Districts

The list of districts will be made by scraping a Wikipedia page:

https://de.wikipedia.org/wiki/Wiener_Gemeindebezirke.

2.2 Restaurants

Foursquare will be used to get Geospatial Data about restaurants in Vienna. I will use Foursquare data such as the restaurant name, ID, location and food category (Italian, vegetarian, etc.).

By combining the list of districts and Foursquare data, we will learn about the concentration of restaurants in each of the districts.

3.0 Data Analyses

3.1 Districts – Scrapping Table from Wikipedia

Firstly, I used a Wikipedia page to scrap a table to create a data frame. I used pandas to transform the data from the Wiki table into a data frame containing an overview of the 23 districts of the city of Vienna. We received the following data frame (Table 1):

	Gemeindebezirk	Bild	Adresse	Anmerkung
0	1., Innere Stadt	NaN	Wipplingerstraße 6–8	(Altes Rathaus)Gebäude unter Denkmalschutz
1	2., Leopoldstadt	NaN	Karmelitergasse 9	Gebäude unter Denkmalschutz
2	3., Landstraße	NaN	Karl-Borromäus-Platz 3	Gebäude unter Denkmalschutz
3	4., Wieden	NaN	Favoritenstraße 18	NaN
4	5., Margareten	NaN	Schönbrunner Straße 54	NaN
5	6., Mariahilf	NaN	Amerlingstraße 11	Gebäude unter Denkmalschutz
6	7., Neubau	NaN	Hermannngasse 24–26	Gebäude unter Denkmalschutz
7	8., Josefstadt	NaN	Schlesingerplatz 4	Gebäude unter Denkmalschutz
8	9., Alsergrund	NaN	Währinger Straße 43	Gebäude unter Denkmalschutz
9	10. Favoriten	NaN	Keplerplatz 5	Gebäude unter Denkmalschutz
10	11., Simmering	NaN	Enkplatz 2	Gebäude unter Denkmalschutz
11	12., Meidling	NaN	Schönbrunner Straße 259	NaN
12	13., Hietzing	NaN	Hietzinger Kai 1–3	Gebäude unter Denkmalschutz
13	14., Penzing	NaN	Hütteldorfer Straße 188	(Ehemaliges Geriatriezentrum Baumgarten)Gebäud...
14	15., Rudolfsheim-Fünfhaus	NaN	Gasgasse 8–10	Gebäude unter Denkmalschutz
15	16., Ottakring	NaN	Richard-Wagner-Platz 19	Gebäude unter Denkmalschutz
16	17., Hernals	NaN	Elterleinplatz 14	Gebäude unter Denkmalschutz
17	18., Währing	NaN	Martinstraße 100	Gebäude unter Denkmalschutz
18	19., Döbling	NaN	Grinzinger Allee 6	NaN
19	20., Brigittenau	NaN	Brigittaplatz 10	Gebäude unter Denkmalschutz
20	21., Floridsdorf	NaN	Am Spitz 1	Gebäude unter Denkmalschutz
21	22., Donaustadt	NaN	Schrödingerplatz 1	NaN
22	23., Liesing	NaN	Perchtoldsdorfer Straße 2	Gebäude unter Denkmalschutz

Table 1: Information about the districts of Vienna

After the manipulation, we obtained the data frame presented in Table 2.

	District
0	1., Innere Stadt
1	2., Leopoldstadt
2	3., Landstraße
3	4., Wieden
4	5., Margareten
5	6., Mariahilf
6	7., Neubau
7	8., Josefstadt
8	9., Alsergrund
9	10. Favoriten
10	11., Simmering
11	12., Meidling
12	13., Hietzing
13	14., Penzing
14	15., Rudolfsheim-Fünfhaus
15	16., Ottakring
16	17., Hernals
17	18., Währing
18	19., Döbling
19	20., Brigittenau
20	21., Floridsdorf
21	22., Donaustadt
22	23., Liesing

Table 2: Districts of Vienna

3.2 Districts - Geospatial Data

In the next step, I used Geopy by installing the conda-forge geopy package in order to get geospatial data, in particular the latitude and the longitude of the 23 districts of Vienna. The information I obtained is presented in Table 3.

	District	Latitude	Longitude
0	1., Innere Stadt	48.209517	16.361570
1	2., Leopoldstadt	48.217739	16.405709
2	3., Landstraße	48.304094	14.288487
3	4., Wieden	48.192314	16.371367
4	5., Margareten	48.191715	16.358145
5	6., Mariahilf	46.316818	11.223573
6	7., Neubau	48.207603	14.202175
7	8., Josefstadt	51.408126	8.749537
8	9., Alsergrund	48.217951	16.361049
9	10. Favoriten	48.184781	16.377374
10	11., Simmering	48.154152	16.437715
11	12., Meidling	48.177762	16.330749
12	13., Hietzing	51.574325	9.778575
13	14., Penzing	48.209485	16.283615
14	15., Rudolfsheim-Fünfhaus	48.195475	16.326301
15	16., Ottakring	48.210229	16.327283
16	17., Hernals	48.222760	16.326872
17	18., Währing	48.234115	16.321606
18	19., Döbling	48.244613	16.334572
19	20., Brigittenau	48.243360	16.375942
20	21., Floridsdorf	48.279815	16.412135
21	22., Donaustadt	48.207262	16.522857
22	23., Liesing	48.138326	16.292840

Table 3: Districts of Vienna – Geospatial Data

Furthermore, using the folium package I created a map of Vienna and its 23 district. I used latitude and longitude values to get the visualization below:

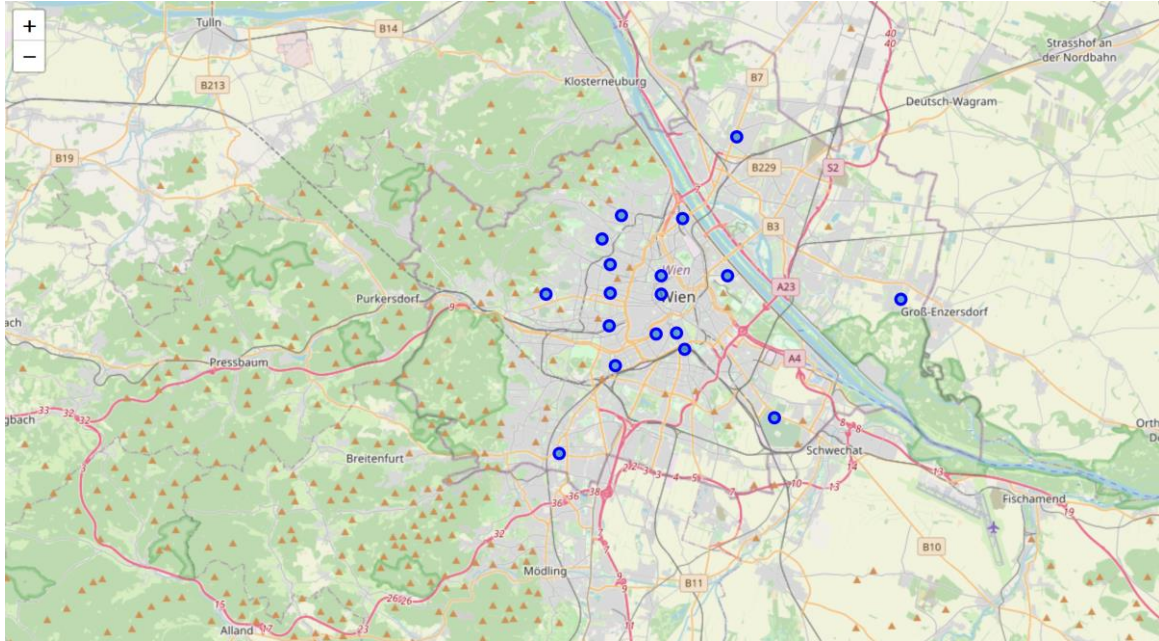


Image 1: Map of Vienna

3.3 Exploring Vienna's Restaurant Scene using Foursquare

In order to explore the restaurant scene in Vienna, I used Foursquare API. I divided the analysis in two parts. Firstly, I explored Vienna's city center (the first district). Later on, I retrieved the Foursquare data for all venues with a distance of less than 3,000 meters from the center of each of the 23 districts.

As a result, I got a list of 1,757 venues located in Vienna with 497 being restaurants. These 497 restaurants contain 39 unique restaurant categories such as Austrian, Italian or Asian restaurant.

Using seaborn/matplotlib packages, I plotted a bar chart (Image 2) that illustrates the 10 most frequently occurring types of restaurants in Vienna. As we can see, Austrian restaurants are most common ones, followed by non-specific types of restaurant, as well as Italian and Asian restaurants.

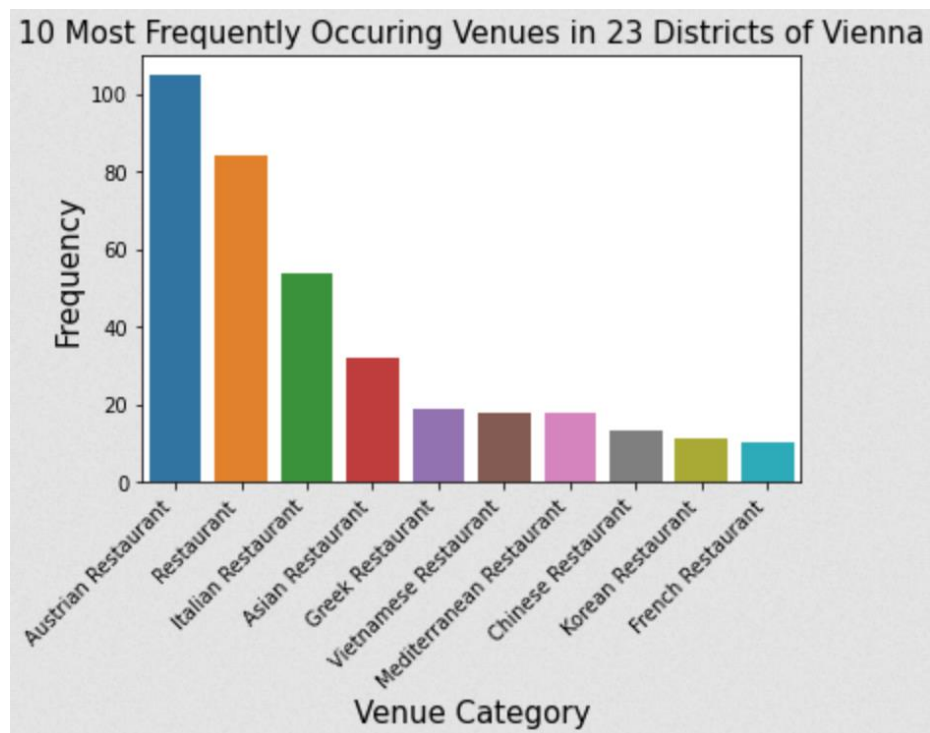


Image 2: Restaurant Scene in Vienna’s Districts

One Hot Encoding

In order to analyze each neighborhood, I created a data frame with pandas one hot encoding for the venues associated to Vienna’s districts, as seen in the table below:

Neighborhood	African Restaurant	American Restaurant	Asian Restaurant	Austrian Restaurant	Chinese Restaurant	Doner Restaurant	Eastern European Restaurant	Ethiopian Restaurant	Falafel Restaurant	Fast Food Restaurant	French Restaurant	German Restaurant	Gluten-free Restaurant	Greek Restaurant
1 1., Innere Stadt	0	0	0	0	0	0	0	0	0	0	1	0	0	0
2 1., Innere Stadt	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3 1., Innere Stadt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 1., Innere Stadt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 1., Innere Stadt	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4: One Hot Encoding

Groupby

Next, I used pandas groupby on neighborhood column and calculated the mean of the frequency of occurrence of each venue category in each city district (Table 5).

	Neighborhood	African Restaurant	American Restaurant	Asian Restaurant	Austrian Restaurant	Chinese Restaurant	Doner Restaurant	Eastern European Restaurant	Ethiopian Restaurant	Falafel Restaurant	Fast Food Restaurant	French Restaurant	German Restaurant	Gluten-free Restaurant	Greek Restaurant	Hungarian Restaurant
0	1., Innere Stadt	0.000000	0.000000	0.052632	0.315789	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.105263	0.0	0.000000	0.052632	0.000000
1	10. Favoriten	0.000000	0.000000	0.080000	0.320000	0.000000	0.000000	0.040000	0.000000	0.000000	0.000000	0.040000	0.0	0.000000	0.080000	0.040000
2	11., Simmering	0.000000	0.000000	0.090909	0.454545	0.000000	0.000000	0.000000	0.000000	0.000000	0.090909	0.000000	0.0	0.000000	0.000000	0.000000
3	12., Meidling	0.000000	0.000000	0.040000	0.320000	0.000000	0.040000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.000000	0.040000	0.040000
4	13., Hietzing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.0	0.000000	0.000000	0.000000
5	14., Penzing	0.000000	0.029412	0.058824	0.176471	0.088235	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.029412	0.088235	0.000000
6	15., Rudolfsheim-Funfhaus	0.000000	0.031250	0.062500	0.093750	0.031250	0.031250	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.000000	0.031250	0.031250
7	16., Ottakring	0.000000	0.000000	0.000000	0.208333	0.041667	0.041667	0.041667	0.041667	0.041667	0.000000	0.041667	0.0	0.000000	0.000000	0.041667
8	17., Hernals	0.000000	0.000000	0.083333	0.055556	0.027778	0.027778	0.000000	0.027778	0.000000	0.000000	0.000000	0.0	0.000000	0.027778	0.000000

Table 5: Groupby

Top 10 Restaurant Venues

Finally, I used this information to create a data frame that shows top 10 most common restaurant venue tapes for each district in the city (Table 6).

	Neighborhood	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	1., Innere Stadt	Austrian Restaurant	Restaurant	French Restaurant	Mediterranean Restaurant	Japanese Restaurant	Korean Restaurant	Greek Restaurant	Vietnamese Restaurant	Asian Restaurant	Falafel Restaurant
1	10. Favoriten	Austrian Restaurant	Italian Restaurant	Asian Restaurant	Greek Restaurant	Restaurant	Mexican Restaurant	Hungarian Restaurant	Portuguese Restaurant	French Restaurant	Modern European Restaurant
2	11., Simmering	Austrian Restaurant	Restaurant	Asian Restaurant	Italian Restaurant	Fast Food Restaurant	African Restaurant	Seafood Restaurant	Mongolian Restaurant	Persian Restaurant	Polish Restaurant
3	12., Meidling	Austrian Restaurant	Restaurant	Turkish Restaurant	Vietnamese Restaurant	Italian Restaurant	Asian Restaurant	Vegetarian / Vegan Restaurant	Doner Restaurant	Thai Restaurant	Tapas Restaurant
4	13., Hietzing	German Restaurant	African Restaurant	Mediterranean Restaurant	Middle Eastern Restaurant	Modern European Restaurant	Mongolian Restaurant	Persian Restaurant	Polish Restaurant	Portuguese Restaurant	Ramen Restaurant
5	14., Penzing	Restaurant	Austrian Restaurant	Italian Restaurant	Chinese Restaurant	Greek Restaurant	Asian Restaurant	Gluten-free Restaurant	Turkish Restaurant	Mediterranean Restaurant	American Restaurant
6	15., Rudolfsheim-Funfhaus	Restaurant	Mediterranean Restaurant	Austrian Restaurant	Italian Restaurant	Vietnamese Restaurant	Thai Restaurant	Tapas Restaurant	Persian Restaurant	Turkish Restaurant	Asian Restaurant
7	16., Ottakring	Austrian Restaurant	Restaurant	Vietnamese Restaurant	Mediterranean Restaurant	Turkish Restaurant	Seafood Restaurant	Hungarian Restaurant	French Restaurant	Falafel Restaurant	Ethiopian Restaurant
8	17., Hernals	Italian Restaurant	Restaurant	Asian Restaurant	Korean Restaurant	Tapas Restaurant	Mediterranean Restaurant	Vietnamese Restaurant	Austrian Restaurant	Ethiopian Restaurant	Indian Restaurant
9	18., Währing	Italian Restaurant	Austrian Restaurant	Restaurant	Asian Restaurant	Korean Restaurant	Sushi Restaurant	Hungarian Restaurant	Turkish Restaurant	Tapas Restaurant	Seafood Restaurant
10	19., Döbling	Austrian Restaurant	Italian Restaurant	Restaurant	Korean Restaurant	Greek Restaurant	Asian Restaurant	Tapas Restaurant	Szechuan Restaurant	Sushi Restaurant	Seafood Restaurant

11	2., Leopoldstadt	Austrian Restaurant	Restaurant	Italian Restaurant	Falafel Restaurant	Japanese Restaurant	Korean Restaurant	Indian Restaurant	Asian Restaurant	Ramen Restaurant	Tapas Restaurant
12	20., Brigittenau	Austrian Restaurant	Restaurant	Italian Restaurant	Korean Restaurant	Asian Restaurant	Greek Restaurant	Tapas Restaurant	Sushi Restaurant	Middle Eastern Restaurant	Mediterranean Restaurant
13	21., Floridsdorf	Restaurant	Fast Food Restaurant	Austrian Restaurant	Italian Restaurant	Asian Restaurant	Mexican Restaurant	Kebab Restaurant	Japanese Restaurant	Sushi Restaurant	African Restaurant
14	22., Donaustadt	Sushi Restaurant	Austrian Restaurant	Chinese Restaurant	Italian Restaurant	Fast Food Restaurant	Restaurant	Seafood Restaurant	Mongolian Restaurant	Persian Restaurant	Polish Restaurant
15	23., Liesing	Italian Restaurant	Chinese Restaurant	Asian Restaurant	Austrian Restaurant	Greek Restaurant	Restaurant	American Restaurant	Fast Food Restaurant	Spanish Restaurant	African Restaurant
16	3., Landstraße	Restaurant	Italian Restaurant	Asian Restaurant	Indian Restaurant	Austrian Restaurant	Fast Food Restaurant	African Restaurant	Vegetarian / Vegan Restaurant	Sushi Restaurant	Polish Restaurant
17	4., Wieden	Austrian Restaurant	Restaurant	Asian Restaurant	Greek Restaurant	Vegetarian / Vegan Restaurant	Mediterranean Restaurant	Portuguese Restaurant	French Restaurant	Hungarian Restaurant	African Restaurant
18	5., Margareten	Austrian Restaurant	Vietnamese Restaurant	Restaurant	Asian Restaurant	Mediterranean Restaurant	French Restaurant	Portuguese Restaurant	Indian Restaurant	Hungarian Restaurant	Greek Restaurant
19	7., Neubau	Restaurant	Austrian Restaurant	African Restaurant	Middle Eastern Restaurant	Modern European Restaurant	Mongolian Restaurant	Persian Restaurant	Polish Restaurant	Portuguese Restaurant	Ramen Restaurant
20	8., Josefstadt	Restaurant	Fast Food Restaurant	African Restaurant	Middle Eastern Restaurant	Modern European Restaurant	Mongolian Restaurant	Persian Restaurant	Polish Restaurant	Portuguese Restaurant	Ramen Restaurant
21	9., Alsergrund	Restaurant	Austrian Restaurant	Mediterranean Restaurant	French Restaurant	Vietnamese Restaurant	Japanese Restaurant	Falafel Restaurant	Middle Eastern Restaurant	Korean Restaurant	Ethiopian Restaurant

Table 6: Top 10 Most Common Restaurant Venues in Vienna's Districts

4.0 Results and Discussion

Clustering Neighborhoods

Having all the data, I wanted to cluster the 23 districts based on the venue category. I used K-Means clustering algorithm from the scikit-learn package and got the results below (Table 7) that show the city districts and their most common venues. They were assigned five different cluster labels (0 to 4).

	Neighborhood	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	10th Most Common Venue
0	1., Innere Stadt	48.209517	16.361570	4	Austrian Restaurant	Restaurant	Korean Restaurant	French Restaurant	Mediterranean Restaurant	Asian Restaurant	Japanese Restaurant	Greek Restaurant	Vietnamese Restaurant	Fast Food Restaurant
1	2., Leopoldstadt	48.217739	16.405709	4	Austrian Restaurant	Restaurant	Japanese Restaurant	Italian Restaurant	Korean Restaurant	Indian Restaurant	Ramen Restaurant	Tapas Restaurant	Falafel Restaurant	French Restaurant
3	4., Wieden	48.192314	16.371367	4	Austrian Restaurant	Restaurant	Asian Restaurant	Greek Restaurant	Hungarian Restaurant	Vegetarian / Vegan Restaurant	Portuguese Restaurant	French Restaurant	American Restaurant	Persian Restaurant
4	5., Margareten	48.191715	16.358145	1	Austrian Restaurant	Restaurant	Vietnamese Restaurant	Asian Restaurant	Vegetarian / Vegan Restaurant	Doner Restaurant	Portuguese Restaurant	Thai Restaurant	Mediterranean Restaurant	Sushi Restaurant
6	7., Neubau	48.207603	14.202175	2	Restaurant	Austrian Restaurant	American Restaurant	Seafood Restaurant	Middle Eastern Restaurant	Modern European Restaurant	Persian Restaurant	Portuguese Restaurant	Ramen Restaurant	Spanish Restaurant
8	9., Alsergrund	48.217951	16.361049	4	Austrian Restaurant	Restaurant	Vietnamese Restaurant	French Restaurant	Mediterranean Restaurant	Japanese Restaurant	Middle Eastern Restaurant	Korean Restaurant	Ethiopian Restaurant	Fast Food Restaurant
9	10., Favoriten	48.184781	16.377374	1	Austrian Restaurant	Restaurant	Greek Restaurant	Asian Restaurant	Italian Restaurant	Vegetarian / Vegan Restaurant	Turkish Restaurant	Eastern European Restaurant	Thai Restaurant	Portuguese Restaurant
10	11., Simmering	48.154152	16.437715	4	Austrian Restaurant	Restaurant	Asian Restaurant	Italian Restaurant	Fast Food Restaurant	American Restaurant	Seafood Restaurant	Persian Restaurant	Portuguese Restaurant	Ramen Restaurant

11	12., Meidling	48.177762	16.330749	1	Austrian Restaurant	Restaurant	Thai Restaurant	Vietnamese Restaurant	Greek Restaurant	Portuguese Restaurant	Asian Restaurant	Italian Restaurant	Hungarian Restaurant	Persian Restaurant
13	14., Penzing	48.209485	16.283615	3	Restaurant	Austrian Restaurant	Italian Restaurant	Greek Restaurant	Chinese Restaurant	Asian Restaurant	American Restaurant	Mediterranean Restaurant	Japanese Restaurant	Seafood Restaurant
14	15., Rudolfsheim-Fünfhaus	48.195475	16.326301	3	Restaurant	Italian Restaurant	Austrian Restaurant	Thai Restaurant	Vietnamese Restaurant	Turkish Restaurant	Tapas Restaurant	Persian Restaurant	Mediterranean Restaurant	Asian Restaurant
15	16., Ottakring	48.210229	16.327283	3	Austrian Restaurant	Restaurant	Vietnamese Restaurant	Mediterranean Restaurant	Italian Restaurant	Thai Restaurant	Seafood Restaurant	Asian Restaurant	Hungarian Restaurant	Greek Restaurant
16	17., Hernals	48.222760	16.326872	3	Italian Restaurant	Restaurant	Korean Restaurant	Tapas Restaurant	Mediterranean Restaurant	Asian Restaurant	Vietnamese Restaurant	Austrian Restaurant	Ethiopian Restaurant	Persian Restaurant
17	18., Währing	48.234115	16.321606	3	Italian Restaurant	Austrian Restaurant	Restaurant	Korean Restaurant	Sushi Restaurant	Asian Restaurant	Indian Restaurant	Turkish Restaurant	Tapas Restaurant	Seafood Restaurant
18	19., Döbling	48.244613	16.334572	1	Austrian Restaurant	Italian Restaurant	Restaurant	Korean Restaurant	Greek Restaurant	Indian Restaurant	Tapas Restaurant	Szechuan Restaurant	Sushi Restaurant	Seafood Restaurant
19	20., Brigittenau	48.243360	16.375942	1	Austrian Restaurant	Restaurant	Italian Restaurant	Korean Restaurant	Indian Restaurant	Tapas Restaurant	Sushi Restaurant	Middle Eastern Restaurant	Mediterranean Restaurant	Asian Restaurant
20	21., Floridsdorf	48.279815	16.412135	0	Restaurant	Fast Food Restaurant	Italian Restaurant	Austrian Restaurant	Mexican Restaurant	Asian Restaurant	Kebab Restaurant	Japanese Restaurant	Sushi Restaurant	American Restaurant
21	22., Donaustadt	48.207262	16.522857	0	Austrian Restaurant	Chinese Restaurant	Italian Restaurant	Fast Food Restaurant	Restaurant	Sushi Restaurant	American Restaurant	Seafood Restaurant	Persian Restaurant	Portuguese Restaurant
22	23., Liesing	48.138326	16.292840	3	Italian Restaurant	Chinese Restaurant	Austrian Restaurant	Fast Food Restaurant	Greek Restaurant	American Restaurant	Spanish Restaurant	Asian Restaurant	Restaurant	Portuguese Restaurant

Table 7: Neighborhood Clusters

I used Folium library to present these 5 clusters (Image 2):

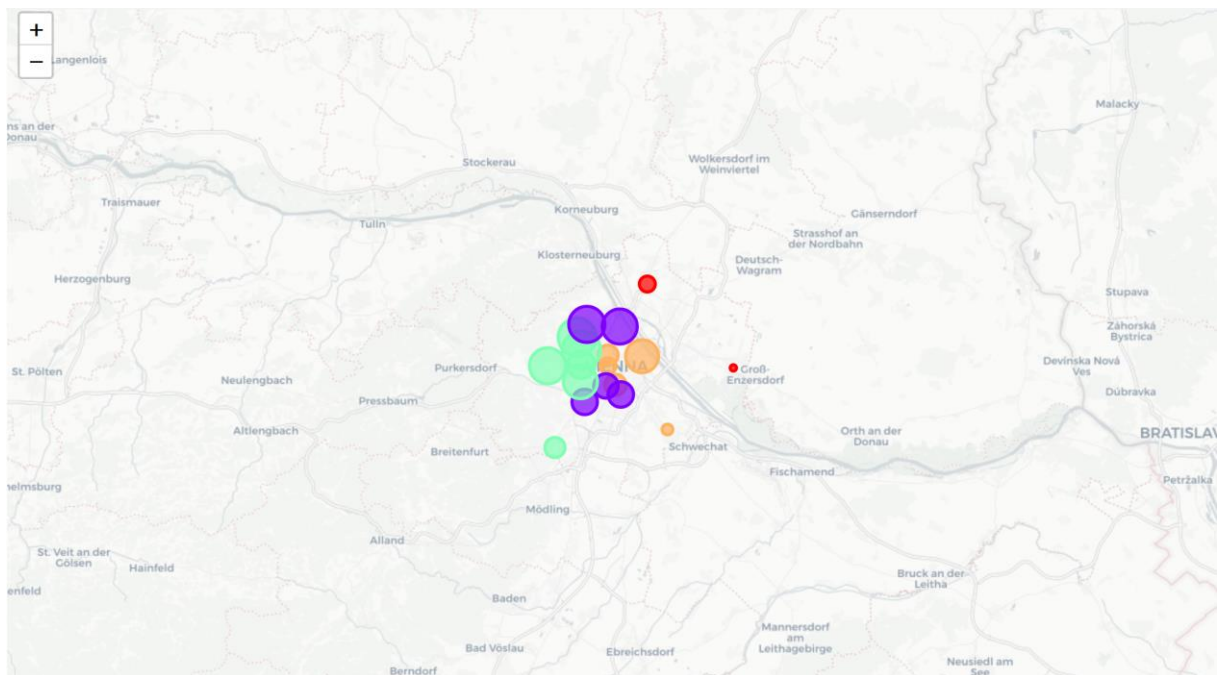


Image 2: Neighborhood Clusters

Examining the 5 Clusters

Finally, I was able to show five clusters of restaurant type concentrations for the city of Vienna. I named them according to the restaurant type concentration.

Cluster 1 – The Austrian Food Cluster (1st, 3rd, 4th, 9th and 11th Districts)

	Latitude	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	48.209517	Austrian Restaurant	Restaurant	Japanese Restaurant	Korean Restaurant	Greek Restaurant	Mediterranean Restaurant	Asian Restaurant	French Restaurant	Portuguese Restaurant	Ramen Restaurant
1	48.217739	Austrian Restaurant	Restaurant	Japanese Restaurant	Italian Restaurant	Korean Restaurant	Indian Restaurant	Ramen Restaurant	Tapas Restaurant	Falafel Restaurant	French Restaurant
3	48.192314	Austrian Restaurant	Restaurant	Asian Restaurant	Greek Restaurant	Hungarian Restaurant	Vegetarian / Vegan Restaurant	Portuguese Restaurant	French Restaurant	American Restaurant	Persian Restaurant
8	48.217951	Austrian Restaurant	Restaurant	French Restaurant	Mediterranean Restaurant	Japanese Restaurant	Korean Restaurant	Middle Eastern Restaurant	Asian Restaurant	Vietnamese Restaurant	Ethiopian Restaurant
10	48.154152	Austrian Restaurant	Restaurant	Asian Restaurant	Italian Restaurant	Fast Food Restaurant	American Restaurant	Seafood Restaurant	Persian Restaurant	Portuguese Restaurant	Ramen Restaurant

Cluster 2 – The Italian Food Cluster (22nd and 23rd Districts)

	Latitude	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
21	48.207262	Italian Restaurant	Austrian Restaurant	Chinese Restaurant	Fast Food Restaurant	Sushi Restaurant	American Restaurant	Seafood Restaurant	Persian Restaurant	Portuguese Restaurant	Ramen Restaurant
22	48.138326	Italian Restaurant	Chinese Restaurant	Austrian Restaurant	Fast Food Restaurant	Greek Restaurant	American Restaurant	Spanish Restaurant	Asian Restaurant	Restaurant	Portuguese Restaurant

Cluster 3 – The Austrian Food Cluster (5th, 10th, 12th, 19th and 20th Districts)

	Latitude	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
4	48.191715	Austrian Restaurant	Restaurant	Vietnamese Restaurant	Asian Restaurant	Vegetarian / Vegan Restaurant	Doner Restaurant	Portuguese Restaurant	Thai Restaurant	Mediterranean Restaurant	Sushi Restaurant
9	48.184781	Austrian Restaurant	Restaurant	Greek Restaurant	Asian Restaurant	Italian Restaurant	Vegetarian / Vegan Restaurant	Turkish Restaurant	Eastern European Restaurant	Thai Restaurant	Portuguese Restaurant
11	48.177762	Austrian Restaurant	Restaurant	Thai Restaurant	Vietnamese Restaurant	Greek Restaurant	Portuguese Restaurant	Asian Restaurant	Italian Restaurant	Hungarian Restaurant	Persian Restaurant
18	48.244613	Austrian Restaurant	Italian Restaurant	Restaurant	Korean Restaurant	Greek Restaurant	Indian Restaurant	Tapas Restaurant	Szechuan Restaurant	Sushi Restaurant	Seafood Restaurant
19	48.243360	Austrian Restaurant	Restaurant	Italian Restaurant	Korean Restaurant	Indian Restaurant	Tapas Restaurant	Sushi Restaurant	Middle Eastern Restaurant	Mexican Restaurant	Mediterranean Restaurant

Cluster 4 – The Diverse Food Cluster (7th District)

	Latitude	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
6	48.207603	Restaurant	Austrian Restaurant	American Restaurant	Seafood Restaurant	Middle Eastern Restaurant	Modern European Restaurant	Persian Restaurant	Portuguese Restaurant	Ramen Restaurant	Spanish Restaurant

Cluster 5 – The Diverse/Austrian/Italian Food Cluster (14th, 15th, 16th, 17th, 18th and 21st Districts)

	Latitude	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
13	48.209485	Restaurant	Austrian Restaurant	Italian Restaurant	Greek Restaurant	Chinese Restaurant	Asian Restaurant	American Restaurant	Mediterranean Restaurant	Japanese Restaurant	Seafood Restaurant
14	48.195475	Restaurant	Italian Restaurant	Austrian Restaurant	Thai Restaurant	Vietnamese Restaurant	Turkish Restaurant	Tapas Restaurant	Persian Restaurant	Mediterranean Restaurant	Asian Restaurant
15	48.210229	Austrian Restaurant	Restaurant	Vietnamese Restaurant	Mediterranean Restaurant	Italian Restaurant	Thai Restaurant	Seafood Restaurant	Asian Restaurant	Hungarian Restaurant	Greek Restaurant
16	48.222760	Italian Restaurant	Restaurant	Korean Restaurant	Tapas Restaurant	Mediterranean Restaurant	Asian Restaurant	Vietnamese Restaurant	Austrian Restaurant	Ethiopian Restaurant	Persian Restaurant
17	48.234115	Italian Restaurant	Austrian Restaurant	Restaurant	Korean Restaurant	Sushi Restaurant	Asian Restaurant	Indian Restaurant	Turkish Restaurant	Tapas Restaurant	Seafood Restaurant
20	48.279815	Restaurant	Fast Food Restaurant	Italian Restaurant	Austrian Restaurant	Mexican Restaurant	Asian Restaurant	Kebab Restaurant	Japanese Restaurant	Sushi Restaurant	American Restaurant

5.0 Conclusion

Our analysis provides some interesting insights into the restaurant scene in Vienna and could be useful to tourists and people coming to study and live in Vienna. Based on the results, people can decide which district fits their needs best.

I made use of Python libraries and Foursquare API to explore the 23 districts of the city of Vienna and illustrated the resulting segmentation of the restaurant venues using Folium library.

Similar analysis can be performed for other cities and be used to explore other problems and gain insights.

Find the code in Github:

https://github.com/MarinaJov/capstone_project/blob/master/Vienna%20City%20Guide%20.ipynb