

An aerial, high-angle photograph of a city street intersection at night. The scene is illuminated by streetlights and the lights from tall buildings. Long exposure light trails from cars and buses create vibrant streaks of orange, red, and white across the road. The buildings are modern, with many windows glowing with interior lights. The street has white lane markings and crosswalks. The overall atmosphere is one of a busy, vibrant urban environment.

Dining Venues by City

COURSERA CAPSTONE PROJECT

*Problem description
& importance*



Food is an important part of traveling



Travel is a significant \$1.6 trillion industry



When planning a trip, tourists want to know what to expect in terms of dining venues

objectives



cluster major cities by food venue types



Return a map of clustered cities



Return a table of top food venue types by city



Initial un-clustered cities

Initial data sample

Table of all 22 cities with coordinates

	city	latitude	longitude
0	New York City	40.7128	-74.0060
1	Chicago	41.8781	-87.6298
2	DC	38.9072	-77.0369
3	LA	34.0522	-118.2437
4	London	51.5074	-0.1278

Initial data sample

Table of restaurants and categories
in all 22 cities

	city	name	category
0	New York City	The Shops & Restaurants at Hudson Yards	Shopping Mall
1	New York City	WFC Shops & Restaurants	Food Court
2	New York City	Restaurants Open 24	Falafel Restaurant
3	New York City	Zhou Restaurants	Food
4	New York City	Barilla Restaurants	Italian Restaurant

Data transformation –pre clustering

this image shows a sample of output that includes the top 5 most common venues and frequency for each city. This is used for clustering

----Bejing----

	venue	freq
0	Chinese Restaurant	0.4
1	Indian Restaurant	0.2
2	French Restaurant	0.2
3	New American Restaurant	0.2
4	Molecular Gastronomy Restaurant	0.0

----Berlin----

	venue	freq
0	Restaurant	0.20
1	German Restaurant	0.20
2	Eastern European Restaurant	0.14
3	Sandwich Place	0.09
4	Italian Restaurant	0.09

	city	latitude	longitude	Cluster	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	New York City	40.7128	-74.0060	0.0	Food	Office	Sandwich Place	Miscellaneous Shop	Furniture / Home Store	Italian Restaurant	Food Court	American Restaurant	Falafel Restaurant	Coworking Space
1	Chicago	41.8781	-87.6298	0.0	Sandwich Place	Food	Office	Pizza Place	Mexican Restaurant	Fish Market	Event Space	Indian Restaurant	Eastern European Restaurant	Middle Eastern Restaurant
2	DC	38.9072	-77.0369	4.0	Sandwich Place	Food	Hotel	Bank	Diner	Office	Middle Eastern Restaurant	Mexican Restaurant	BBQ Joint	American Restaurant
3	LA	34.0522	-118.2437	0.0	Food	Sandwich Place	Mexican Restaurant	Japanese Restaurant	Restaurant	Spanish Restaurant	American Restaurant	Seafood Restaurant	Department Store	Peruvian Restaurant
4	London	51.5074	-0.1278	0.0	Sandwich Place	Restaurant	Office	African Restaurant	Turkish Restaurant	Italian Restaurant	Miscellaneous Shop	Pizza Place	Seafood Restaurant	Food Court

Results table



Clustered cities map

Results



Cities within a similar region had similar types of dining



The united states compares with western Europe



Johannesburg did not compare with any other city



Sydney, Australia compares with cities in Asia