

# Comparing the similarities of different cities across globe

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Which cities  
are similar to  
each other?

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## Objective

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We would understand in-depth insights about the cities across the globe .

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City planner can use this analysis to improve the city infrastructure and resident life-style.

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A person moving to a new city can use this analysis to make an informed judgement about the city.

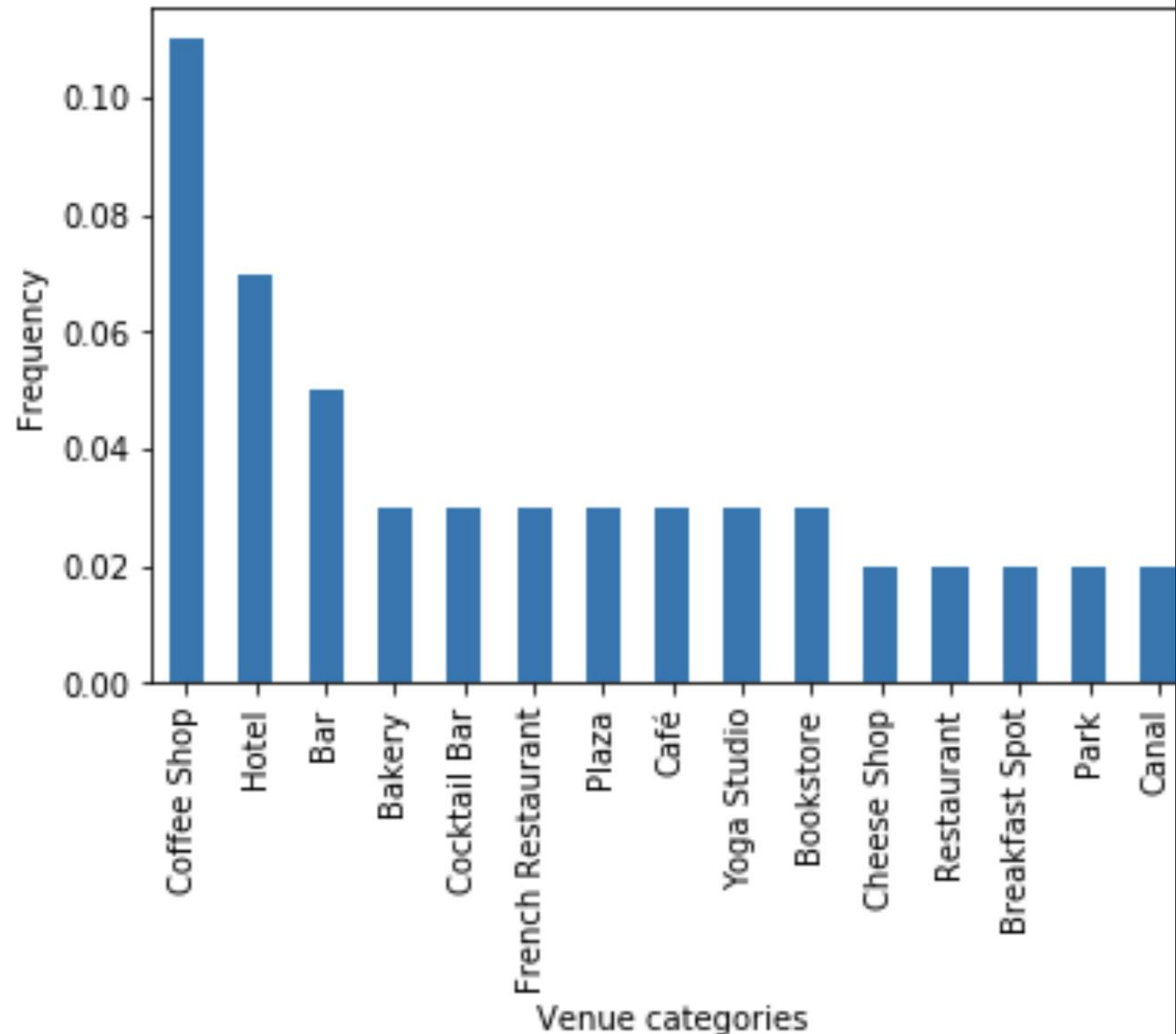
# Data and data processing

- Latitude and longitude of selected city was retrieved using geopy python library.
- Nearby venues of the cities were explored using foursquare API.
  - Chosen radius to explore : 8km.
  - Limitation on number of venues : 100.
- Data processing was performed to produce the dataframe as shown on the right.

city	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
Perth	-31.952712	115.860480	2	Café	Coffee Shop	Park	Bakery	Italian Restaurant	Hotel	Vietnamese Restaurant	Asian Restaurant	Ice Cream Shop	Gym
Sydney	-33.854816	151.216454	2	Park	Café	Scenic Lookout	Coffee Shop	Theater	Cocktail Bar	Bakery	Hotel	Bookstore	Bar
Melbourne	-37.814218	144.963161	2	Café	Coffee Shop	Park	Bar	Cocktail Bar	Ice Cream Shop	Plaza	Hotel	Bakery	Japanese Restaurant
Brisbane	-27.468968	153.023499	0	Coffee Shop	Park	Beer Bar	Brewery	Hotel	Café	Italian Restaurant	Bar	Farmers Market	Scenic Lookout
Amsterdam	52.372760	4.893604	0	Coffee Shop	Hotel	Bar	Bakery	Cocktail Bar	French Restaurant	Plaza	Café	Yoga Studio	Bookstore
Rotterdam	51.922896	4.463173	0	Coffee Shop	Café	Bakery	Hotel	Restaurant	Bar	Park	Movie Theater	Sandwich Place	Delicatessen / Bodega
Berlin	52.517037	13.388860	0	Coffee Shop	Park	Bookstore	Ice Cream Shop	Bakery	Wine Bar	Monument / Landmark	Café	Gourmet Shop	Art Gallery
Munich	48.137108	11.575382	2	Café	Plaza	Ice Cream Shop	Cocktail Bar	Gourmet Shop	Hotel	Coffee Shop	Department Store	Beer Garden	Italian Restaurant
Cologne	50.938361	6.959974	2	Park	Café	Coffee Shop	Burger Joint	Italian Restaurant	Plaza	Bar	Hotel	Ice Cream Shop	Restaurant
Delhi	28.651718	77.221939	1	Indian Restaurant	Café	Hotel	Lounge	Chinese Restaurant	Restaurant	Coffee Shop	Bar	Monument / Landmark	Fast Food Restaurant
Mumbai	18.938771	72.835335	1	Indian Restaurant	Hotel	Dessert Shop	Café	Fast Food Restaurant	Cricket Ground	Scenic Lookout	Pizza Place	Ice Cream Shop	Seafood Restaurant
Bangalore	12.979120	77.591300	1	Hotel	Ice Cream Shop	Indian Restaurant	Bakery	Brewery	Italian Restaurant	Department Store	Burger Joint	Lounge	Pub
Ahmedabad	23.021624	72.579707	1	Café	Indian Restaurant	Restaurant	Hotel	Vegetarian / Vegan Restaurant	Fast Food Restaurant	Dessert Shop	Pizza Place	Coffee Shop	Multiple

# Exploratory data analysis

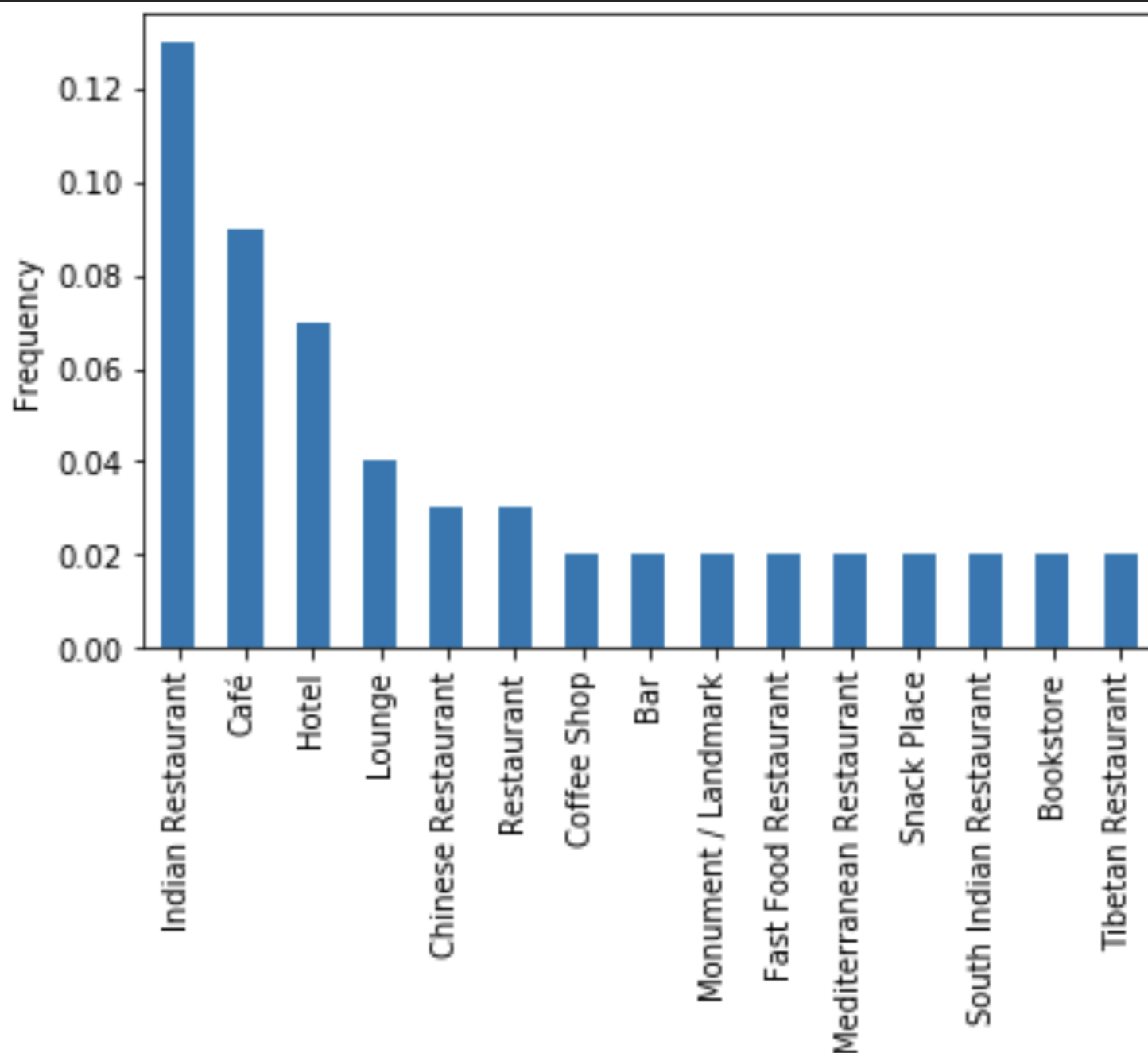
- Coffee shops, hotel and bar are the top common venues in Amsterdam.
- Strong presence of hotel suggests a popular and touristic city.
- In Netherlands, coffee shops act as a legal dispensaries for marijuana. Its strong presence suggests high demand in the city either by tourists and/or residents.



Most common venues for Amsterdam

# Exploratory data analysis

- Strong presence of Indian restaurant shows the eternal love for food in Delhi.
- Strong presence of hotels suggests a popular and touristic city.
- Absence of parks from the list suggests an opportunity to improve city infrastructure and eventually resident's life-style.

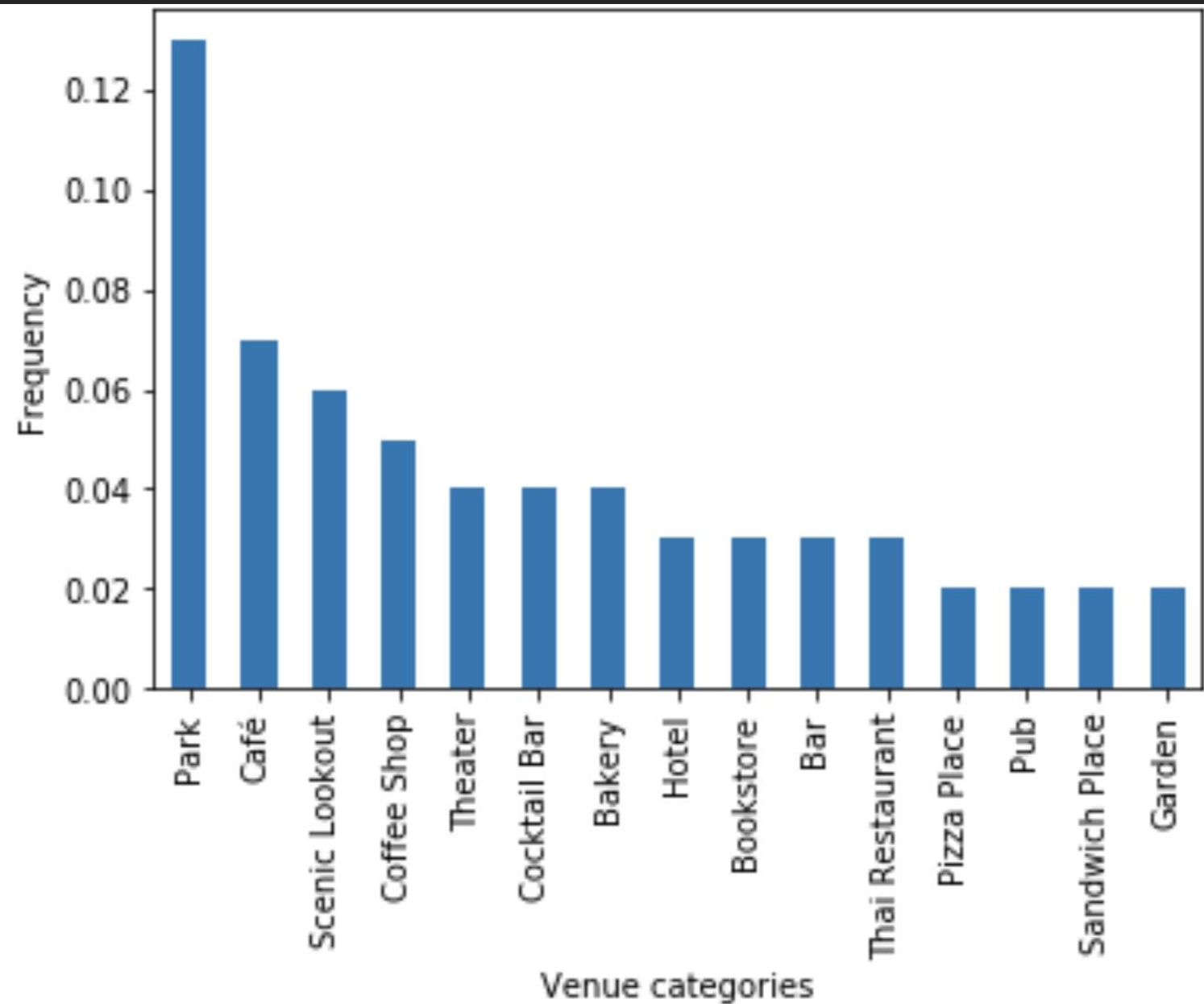


Most common venues for Delhi



# Exploratory data analysis

- Even being the most populous city of Australia, city has efficiently managed to have park as the top venue.
- Scenic lookout and theater suggest that a city resident has cultural as well as natural getaways.

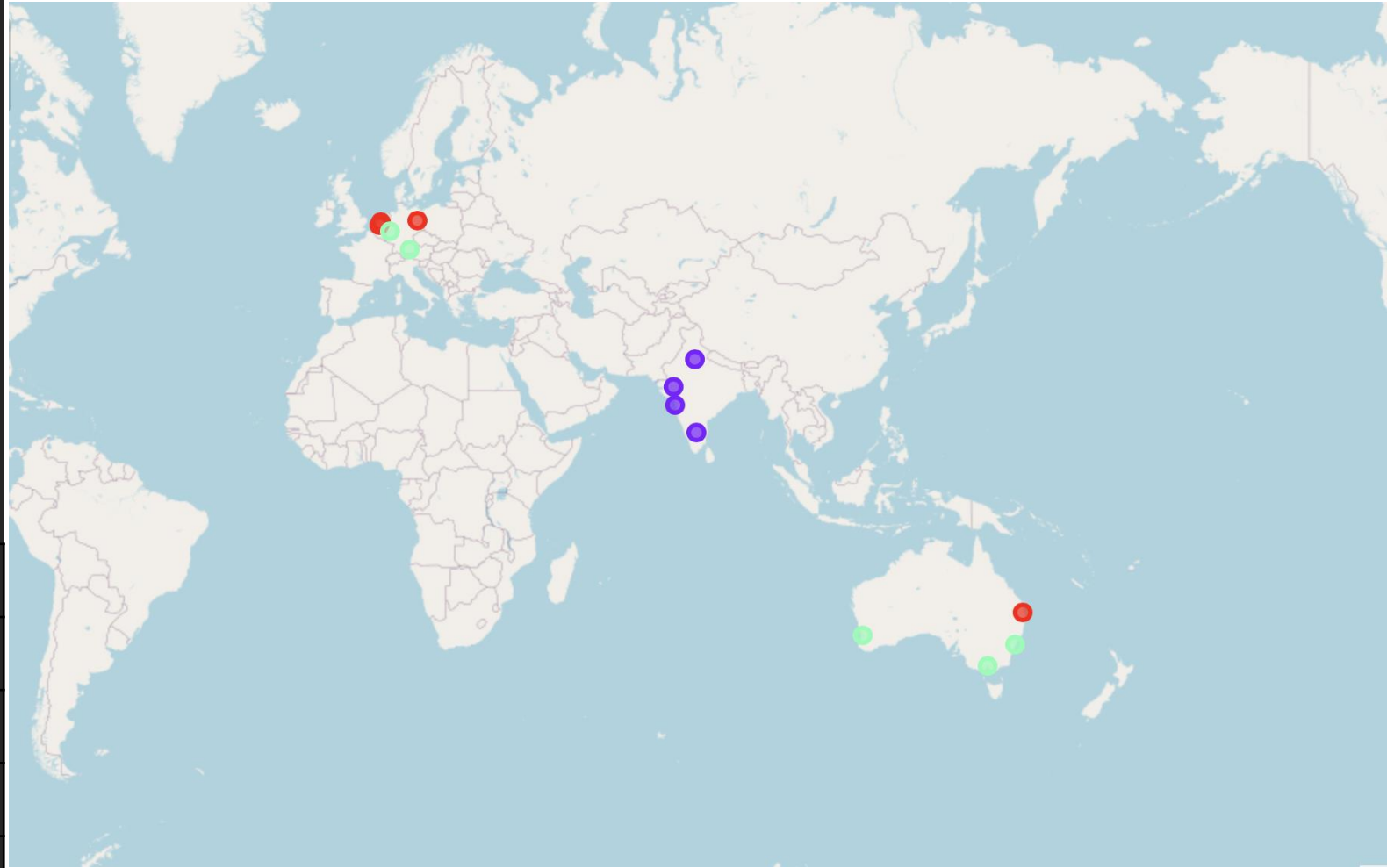


Most common venues for Sydney

# Clusters after applying k-mean clustering algorithm

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Cluster 0	Cluster 1	Cluster 2
Brisbane	Delhi	Perth
Amsterdam	Mumbai	Sydney
Rotterdam	Ahmedabad	Melbourne
Berlin	Bangalore	Cologne
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# Conclusions

- Cluster 0: Coffee shops, hotel brewery and bar are the dominant venues. These cities seem to be a touristic place as the hotel is one of the dominant venues.
- Cluster 1: Indian restaurant, hotel and café are the dominant venues, whereas parks or garden are not in the top 15<sup>th</sup> most common venues list. This suggests an opportunity for a stakeholder to improve the resident's life-style by taking an appropriate actions. Immense love for food is obvious from the strong presence of Indian restaurants in this cluster.
- Cluster 2: Café, park, scenic lookout are the most dominant venues. Even being a big and populous cities in this cluster, these cities has a significant amount of parks and scenic lookout.