Restaurant Delivery Clusters in Berlin

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Food Delivery Options for Independent Restaurants

Self Organized

Example: Domino's, traditional restaurants in some developing countries

⇒Labor costs too high

Via Apps

Example: takeaway.com, Uber Eats, GrubHub

⇒ Reliant on large corporations to protect restaurant's interests

Possible Solution: Local Network

Entity:

- Contractor company servicing local area restaurants
- Cooperative of restaurants themselves

The point is :

- It is local only
- Restaurants interact with customers directly online
- Delivery service contracted by restaurants in the background
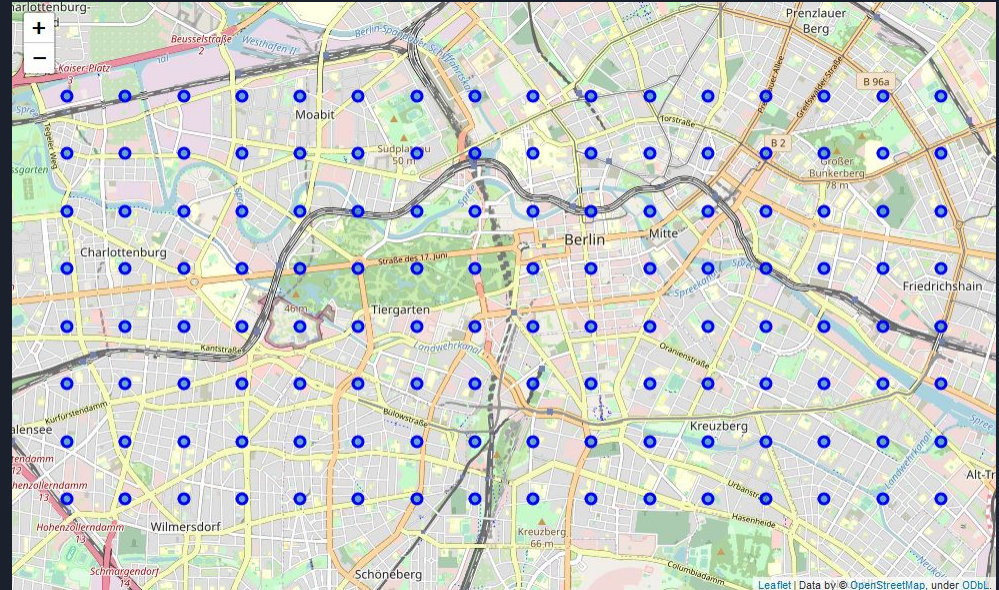
Data Sources

- Foursquare API (**explore**)
    - Name
    - Category
    - Id
    - Coordinates

- OpenStreetMap Nominatim (**geopy**)

Grid over Berlin

Foursquare limits number of results per location

⬇

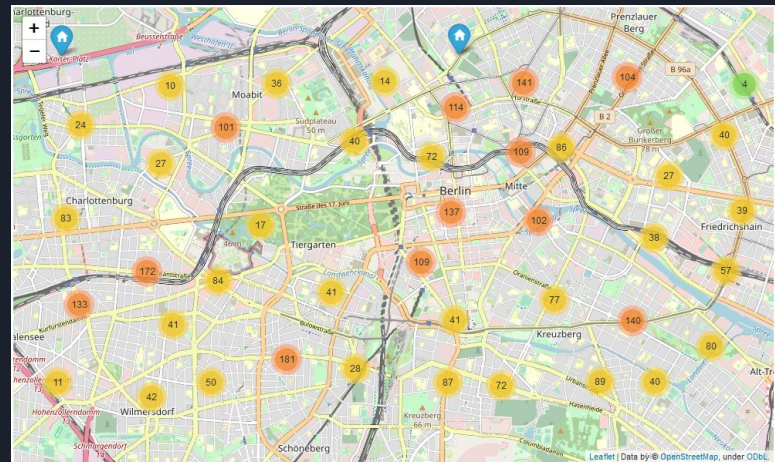Solution: explore many points!
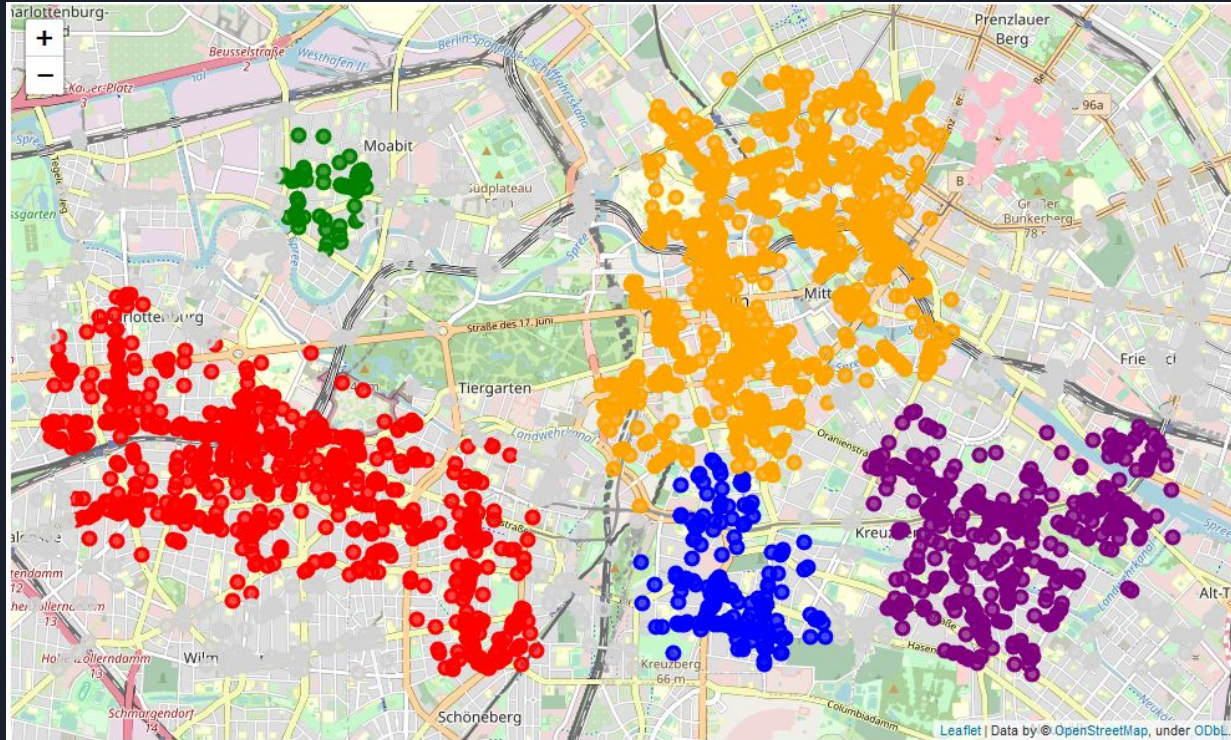
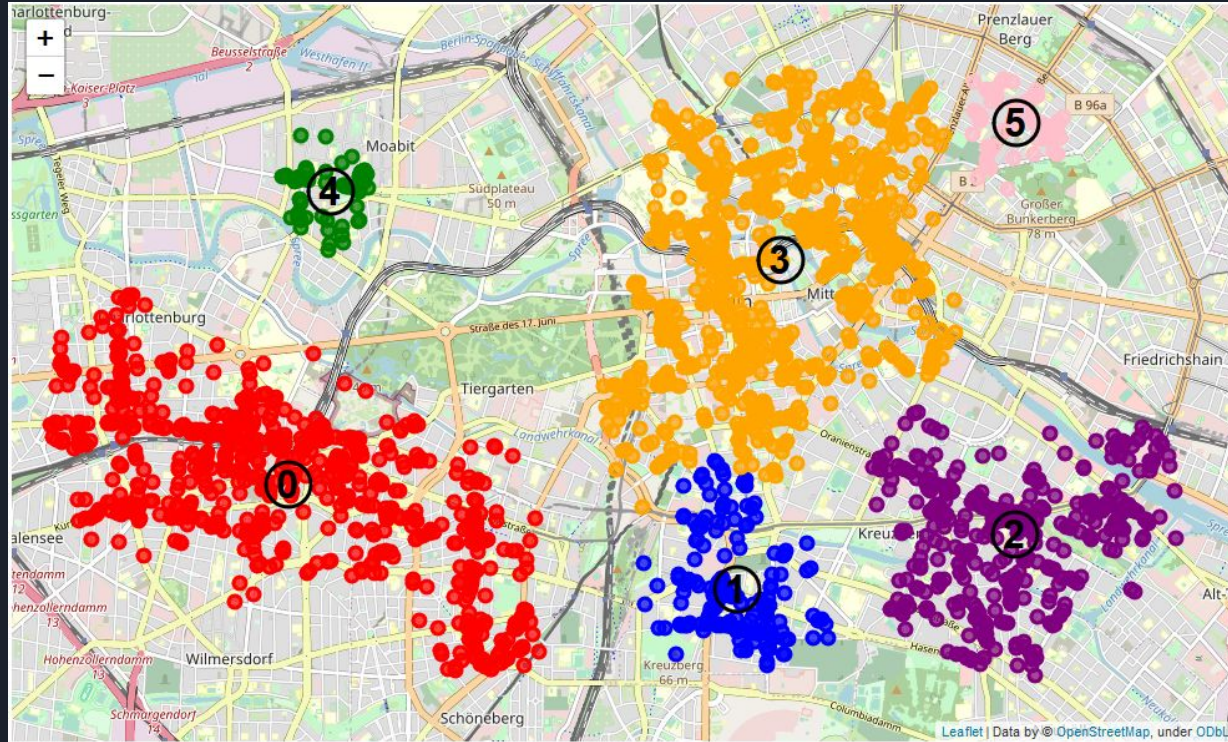# Data in dataframe and map

HeatMap: visual clusters

DBSCAN
High density clusters separated from noise

6 Candidate Regions for delivery service

Winner: Region #3!

Most populous

Region	
0	690
1	182
2	407
3	875
4	62
5	72

Low deviation from alternatives

Region	1st Most Common Category	2nd Most Common Category	3rd Most Common Category	4th Most Common Category	5th Most Common Category	6th Most Common Category	7th Most Common Category	8th Most Common Category	9th Most Common Category	10th Most Common Category
0	Italian Restaurant	Café	Bakery	German Restaurant	Vietnamese Restaurant	Restaurant	Burger Joint	Chinese Restaurant	Indian Restaurant	French Restaurant
1	Café	Italian Restaurant	Bakery	Asian Restaurant	Vietnamese Restaurant	Indian Restaurant	Pizza Place	Bistro	Sushi Restaurant	German Restaurant
2	Café	Italian Restaurant	Bakery	Pizza Place	German Restaurant	Vietnamese Restaurant	Restaurant	Turkish Restaurant	Indian Restaurant	Falafel Restaurant
3	Café	Italian Restaurant	German Restaurant	Bakery	Vietnamese Restaurant	Restaurant	Sushi Restaurant	Breakfast Spot	Bistro	Vegetarian / Vegan Restaurant
4	Bakery	Café	Italian Restaurant	Pizza Place	Asian Restaurant	Burger Joint	Breakfast Spot	Vietnamese Restaurant	Fried Chicken Joint	Indian Restaurant
5	Café	Vietnamese Restaurant	Italian Restaurant	Bakery	Breakfast Spot	Deli / Bodega	German Restaurant	Pizza Place	Sushi Restaurant	Doner Restaurant

Conclusion

Urban settings ⇒ high density of restaurants desired for best chance of success

- More restaurants to approach for cooperation
- Quicker service to consumers

Further areas of possible exploration:

- Categories more popular for delivery
- Survey of restaurant owners