

# The Battle of Neighborhoods (Amsterdam)

## Introduction/Business Problem

As an expat living in Amsterdam, I would like to get insights in its neighborhoods. People often asked me what are the coolest areas or the best neighborhoods. But my answer always starts with: "It depends what you are looking for." Amsterdam has 101 different boroughs.

For those **expats**, I am set to mine Amsterdam's neighborhoods information and cluster its neighborhoods based on their similarity and features. In this way, I give other expats a set of neighborhoods together with its features; for instance, what places are more or less popular. In other words, if you like coffee shops, restaurants or shopping, I could recommend you to check these neighborhoods. On the other hand, if you like museums, movies, parks, maybe you should go to these boroughs.

Moreover, this information might provide you (**Amsterdam citizen**) valuable insights about similar neighborhoods to the one you live now. Let's say you want to live in another borough but very similar to the one you are living at the moment. Or the other way around, you would like to live in a different surrounding. Or maybe, you already has a restaurant and would like to open another one in a very similar environment. What area do you choose?

And last but not least, **Amsterdam Municipality** might use the result of this research to understand better the current situation of its neighborhoods. For instance, let's assume they want to open a coffee shop in an area that it is already full of coffee shops; typical problems coming along with coffee shops might boost. It might be a better idea to open the coffee shop in a different borough, in order not to concentrate the problem in one place but to spread it and soften its effects overall.

### Business Question:

In this research, using a data-driven approach, I will segment and cluster Amsterdam neighborhoods based on their similarities and show their top 10 most common places plus their top 10 less popular. *What Neighborhoods in Amsterdam are similar?*

### Main Stakeholders:

- Myself
- Expats
- Amsterdam citizens
- Amsterdam municipality

Let's data-discover Amsterdam!

## Data

The stating source of data will be the name of the neighborhoods of Amsterdam. I will get their names from [Postcodebijadres](#). See figure 1.

## Wijken van Amsterdam

Amsterdam is onderverdeeld in 101 verschillende wijken.

Burgwallen-Oude Zijde	Burgwallen-Nieuwe Zijde	Grachtengordel-West			
Grachtengordel-Zuid	Nieuwmarkt/Lastage	Haarlemmerbuurt	Jordaan		
De Weteringschans	Weesperbuurt/Plantage	Oostelijke Eilanden/Kadijken			
Westelijk Havengebied	Bedrijventerrein Sloterdijk	Houthavens			
Spaarndammer- en Zeeheldenbuurt	Staatsliedenbuurt	Centrale Markt			
Frederik Hendrikbuurt	Da Costabuurt	Kinkerbuurt	Van Lennepbuurt		
Helmersbuurt	Overtoomse Sluis	Vondelbuurt	Zuidas	Oude Pijp	
Nieuwe Pijp	Zuid Pijp	Weesperzijde	Oosterparkbuurt	Dapperbuurt	
Transvaalbuurt	Indische Buurt West	Indische Buurt Oost	Oostelijk Havengebied		
Zeeburgereiland/Nieuwe Diep	IJburg West	Sloterdijk	Landlust	Erasmuspark	
De Kolenkit	Geuzenbuurt	Van Galenbuurt	Hoofdweg e.o.	Westindische Buurt	
Hoofddorppleinbuurt	Schinkelbuurt	Willemspark	Museumkwartier		
Stadionbuurt	Apollobuurt	IJburg Oost	IJburg Zuid	Scheldebuit	IJselbuurt
Rijnbuurt	Frankendael	Middenmeer	Betondorp	Omval/Overamstel	
Prinses Irenebuurt e.o.	Volewijk	IJplein/Vogelbuurt	Tuindorp Nieuwendam		
Tuindorp Buiksloot	Nieuwendammerdijk/Buiksloterdijk	Tuindorp Oostzaan			
Oostzanerwerf	Kadoelen	Waterlandpleinbuurt	Buikslotermeer		
Banne Buiksloot	Noordelijke IJ-oevers West	Noordelijke IJ-oevers Oost	Waterland		
Elzenhagen	Chassébuurt	Slotermeer-Noordoost	Slotermeer-Zuidwest		
Geuzenveld	Eendracht	Lutkemeer/Ookmeer	Osdorp-Oost	Osdorp-Midden	
De Punt	Middelveldsche Akerpolder	Slotervaart Noord	Overtoomse Veld		
Westlandgracht	Sloter-/Riekerpolder	Slotervaart Zuid	Buitenveldert-West		
Buitenveldert-Oost	Amstel III/Bullewijk	Bijlmer Centrum (D,F,H)			
Bijlmer Oost (E,G,K)	Nellestein	Holendrecht/Reigersbos	Gein	Driemond	
Wijk 05 Watergang					

Figure 1. Neighborhoods of Amsterdam

Another source of information it will be **Foursquare**, which is a location data provider; essentially, to explore a geographical location, and to get popular venues around a location.

To utilize *Foursquare* location data, we need to pass the latitude and the longitude coordinates of the Amsterdam neighborhoods. To obtain this, we will use **Nominatim**, a module to convert an address into latitude and longitude values from **Geopy**. Geopy is a Python client/library for several popular geocoding web services. It makes it easy for Python developers to locate the coordinates of addresses, cities, countries, and landmarks across the globe using third-party geocoders and other data sources.

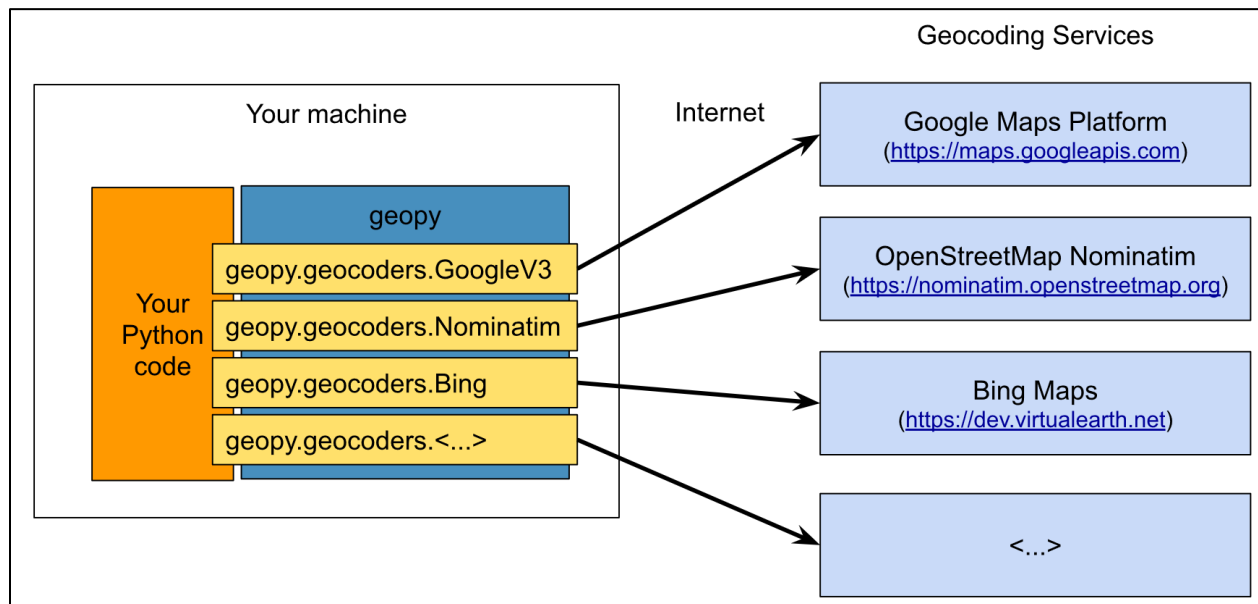


Figure 2. Geocoding Services

In case, *Nominatim* does not give us good results, we will use instead the **Geocoder** Python package to fetch the exact locations of Amsterdam Neighborhoods. Geocoder is a simple and consistent geocoding library written in Python to convert physical addresses to geographic locations (latitude and longitude).