



IBM Data Science Professional Certificate

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The Battle of Neighborhoods

Capstone project

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Abstract

TBD.

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Introduction**Background**

McDonald's is worldwide maybe the most well-known fast food franchise formula. In the Netherlands it has about 250 restaurants, weekly they serve together over 3 million guests. Restaurants are owned by a franchisee or by the McDonald's itself. The company is still looking to expand their businesses and therefore looking into possible new venues constantly. New restaurants have a need for a minimal floorspace and a minimal number of inhabitants in the area.

Problem

For this project we are exploring the possibility if and where McDonald's could open a new restaurant in the city of Amsterdam, the Netherlands, with regards to the specified requirements. As floor surface a minimal of 500 square meters is necessary and 35000 inhabitants/potential customers per venue. McDonald's already has 17 active venues in the Amsterdam area so it will be a real challenge to find a new spot.

Interest

This project and it's result are interesting for the McDonald's corporation as well as a potential franchisee looking to start a new venue in Amsterdam.

Data

To analyse this problem we are looking into several different datasets. Firstly divide Amsterdam into clusters of 35,000 inhabitants. For this a dataset from the municipality of Amsterdam is available (see figure 1) with all the buildings in the city and their latitude and longitude location data. The set also describes if a specified address it is a house or a shopping venue and the size of the building in square meters. In the data set are 466,478 living accommodations present and according to the website of the municipality the average persons per household in Amsterdam is 1.8. That leads to a total of inhabitants of 839,660 (on the time of the dataset) Based on the buildings dataset we form clusters of 19,444 addresses ($35000/1.8$)

Secondly, in the found clusters we check if there already is a McDonald's present, utilizing the Foursquare API (see figure 2). If a cluster does not have a restaurant we try to find a possible address in this cluster, from the building dataset to be presented as a possible new restaurant.

The dataset used for this analysis can be downloaded from:

<https://api.data.amsterdam.nl/datasetselectie/bag/export/>

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Naam c	Huisnu	Huislet	Huisnu	Postco	Woong	Naam s	Code st	Naam g	Code g	Naam l	Code l	Naam b	Code b	Code b	X-coor	Y-coor	Latitud
2	Eerste Cor	31		1	1054BR		West	E	Oud West DX05	Helmersb E20	Helmersb E20a	AE35	120075	486396	52,36434			
3	Eerste Jan	46	3A		1072TW		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Hercules K24d	AK17	121021	485128	52,353			
4	Eerste Anj	18		2	1015NR		Centrum	A	Centrum DX01	Jordaan A06	Anjelierst A06l	YJ28	120697	487908	52,37797			
5	Eerste Sw	12		2	1073CM		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Sarphatip K24e	AK31	121627	485498	52,35637			
6	Eerste Jan	46		1	1072TW		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Hercules K24d	AK17	121021	485128	52,353			
8	Eerste Jan	64	H		1072TX		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Hercules K24d	AK18	121090	485144	52,35315			
9	Eerste Atj	2	A		1094KL		Oost	M	Indische E DX14	Indische E M31	Noordwe M31b	AQ25	124003	486135	52,36223			
10	Eerste Sw	21	2A		1073CL		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Sarphatip K24e	AK36	121678	485436	52,35581			
11	Eerste Jan	48	2V		1072TW		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Hercules K24d	AK17	121027	485129	52,35301			
12	Eerste Cor	61		1	1054BT		West	E	Oud West DX05	Helmersb E20	Helmersb E20a	AE40	120123	486284	52,36334			
13	Eerste Jan	68	3A		1072TX		Zuid	K	De Pijp / FDX12	Oude Pijp K24	Hercules K24d	AK18	121102	485146	52,35317			

Figure 1: The Amsterdam building dataset

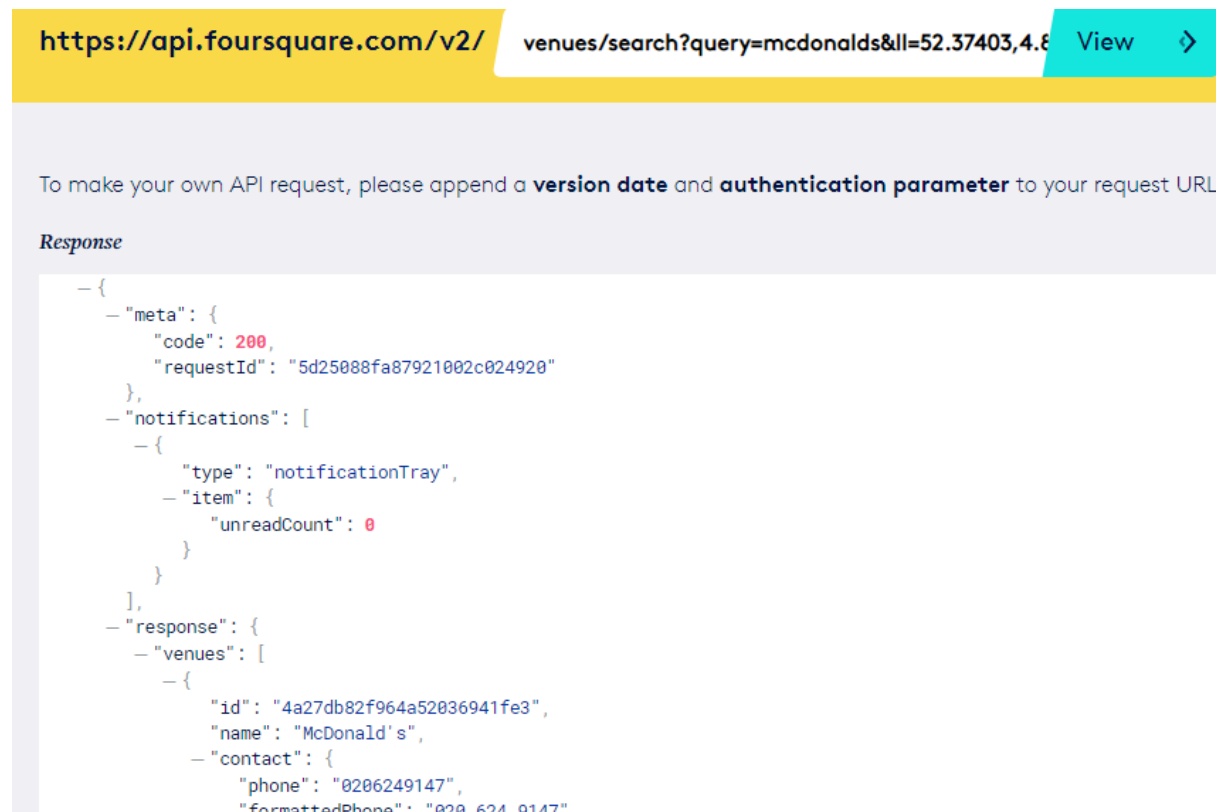


Figure 2: The foursquare dataset

Methodology

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Results

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Discussion

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Conclusion

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References

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