ImmoEliza Data Analysis

Team Tensorflow

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Cleaning and Assumptions

- Source of data: ImmoWeb
- Data cleaned using Python with Pandas
- Empty values replaced with assumed values

r	surface	surface_p	facades	state	swi
			2	To restore	
			2		
				To renovate	
	94	44	2	To renovate	
	300	300	2	To restore	
		493			
		160		To renovate	

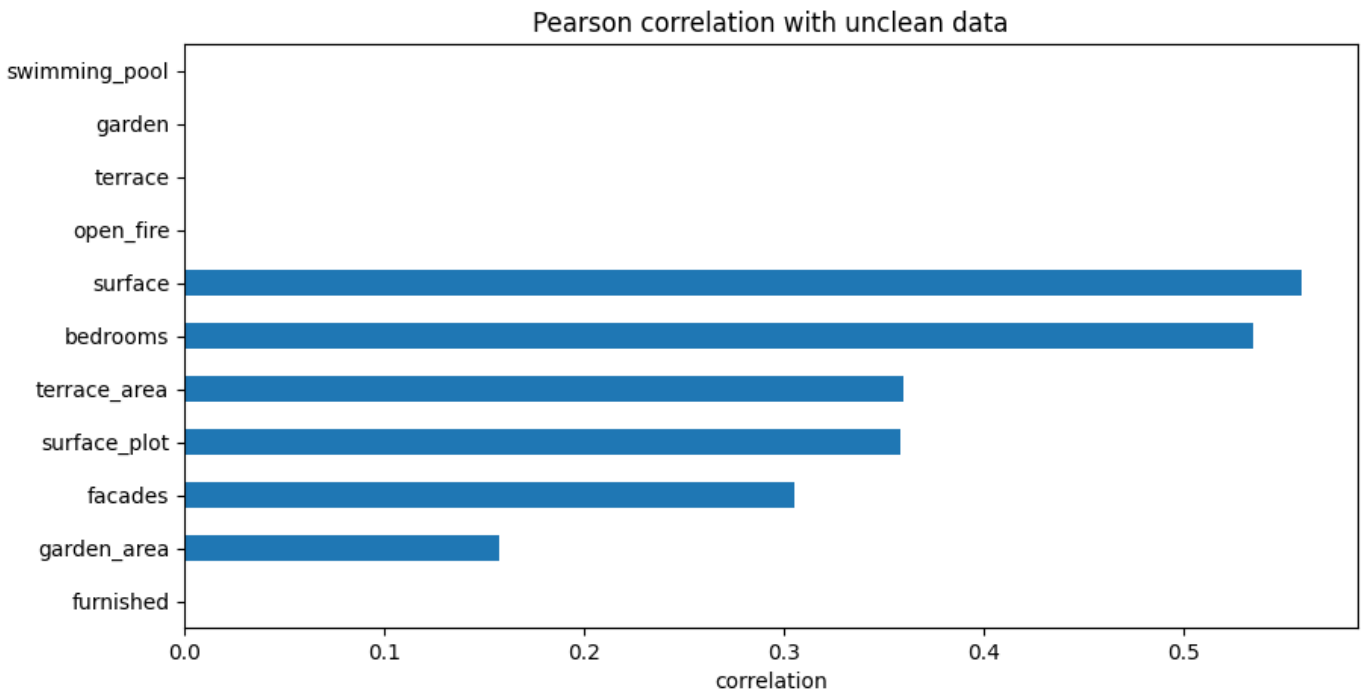
surface	surface_p	facades	state	s
201.4368	201.4368	2	To restore	
201.4368	201.4368	2	Good	
201.4368	201.4368	2	To renova	
201.4368	201.4368	2	Good	
94	44	2	To renova	
300	300	2	To restore	
201.4368	493	2	Good	
201.4368	160	2	To renova	

How many rows and columns ?

- 13505 rows by 19 columns

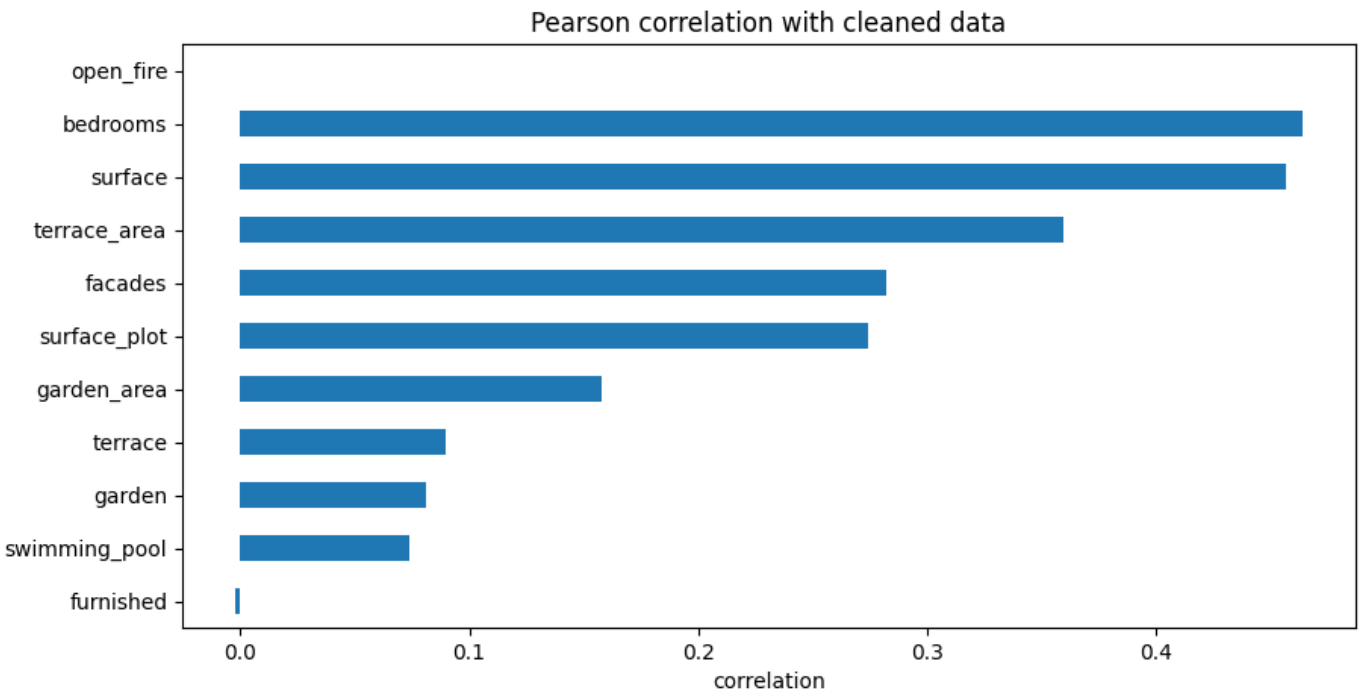
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
index	locality	proprety_	price	bedroom:	area	equippec	furnishec	open_fire	terrace	terrace_a	garden	garden_a	surface	surface_p	facades	state	swimming_pool	
0	6061 Mon	House	35000	3	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	To restor	0	
1	6183 Traz	House	35000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
2	6020 Dam	House	35000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	To renov	0	
3	6592 Mon	House	35000	3	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
4	7390 Quai	House	35000	2	94	Installed	0	0	0		0		94	44	2	To renov	0	
5	5575 Will	House	35000	5	300	Installed	0	0	0		0		300	300	2	To restor	0	
6	5620 Sain	House	35000	2	201.4368	Installed	0	0	0		0		201.4368	493	2	Good	0	
7	6224 Wan	House	35000	2	201.4368	Installed	0	0	0		0		201.4368	160	2	To renov	0	
8	7012 Jem	House	35000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
9	7860 Less	House	37500	3	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
10	5580 Jem	House	39000	2	120	Not insta	0	0	0		1	10	120	99	2	Good	0	
11	8400 Oost	EauPex	39000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
12	6061 Mon	Town-hou	39000	2	201.4368	Installed	0	0	0		0		201.4368	310	2	As new	0	
13	3920 Lom	House	39000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
14	8200 Sint-	House	39400	2	15	Installed	0	0	0		0		15	15	2	Good	0	
15	3920 Lom	House	39500	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
16	7100 HAIN	House	39999	2	62	Not insta	0	0	1	7	1	56	62	95	2	To renov	0	
17	5580 Roch	Studio	40000	2	18	Semi equ	0	0	0		0		18	18	2	To renov	0	
18	4100 Sera	House	40000	2	76	Installed	0	0	0		0		76	114	2	To renov	0	
19	7012 Jem	House	40000	2	94	Installed	0	0	0		0		94	150	2	To renov	0	
20	8930 Men	House	40000	2	49	Installed	0	0	0		0		49	49	2	To be do	0	
21	5550 Mer	Studio	40000	1	36	Installed	0	0	0		0		36	36	2	Good	0	
22	4480 Engi	Apartmer	40000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
23	7170 Man	House	40000	3	201.4368	Installed	0	0	0		0		201.4368	620	2	To renov	0	
24	7390 Quai	House	40000	2	60	Installed	0	0	0		0		60	60	3	To renov	0	
25	6567 Mer	House	40000	4	173	Installed	0	0	0		0		173	370	2	Good	0	
26	7160 Chap	House	40000	2	201.4368	Installed	0	0	0		0		201.4368	201.4368	2	Good	0	
27	7390 Quai	House	40000	2	201.4368	Not insta	0	0	0		0		201.4368	201.4368	2	Good	0	

Correlation between the variables and the target



Unclean Data

Correlation between the variables and the target

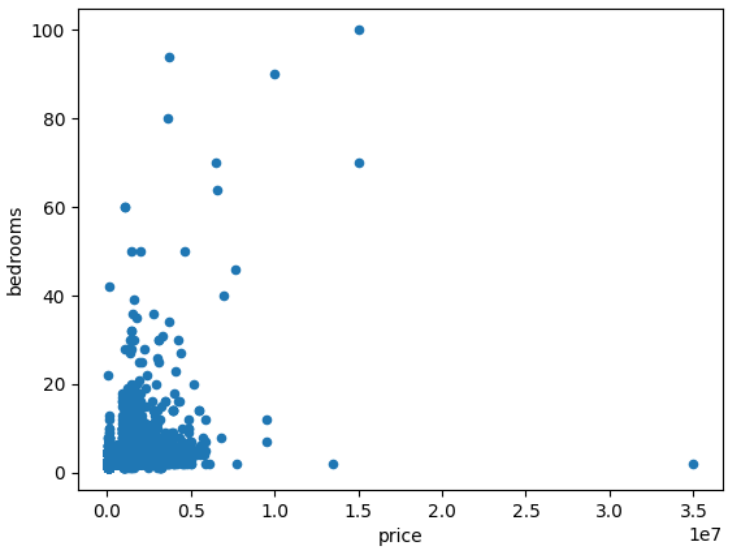


Clean Data

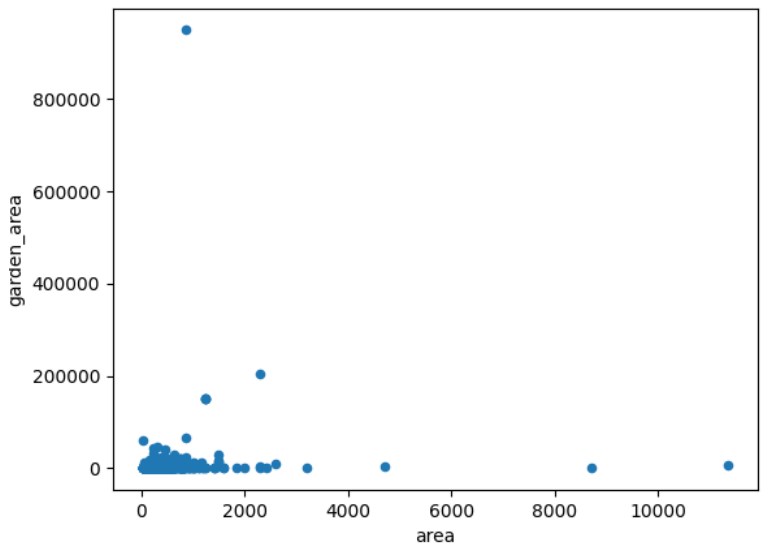
Percentage of missing values per column

locality	0.000000
proprety_type	0.000000
price	0.000000
bedrooms	11.395779
area	29.707516
equipped_kitchen	40.584969
furnished	34.091077
open_fire	100.000000
terrace	72.632358
terrace_area	72.632358
garden	83.843021
garden_area	83.843021
surface	29.707516
surface_plot	54.935209
facades	30.292484
state	29.233617
swimming_pool	93.780081

Outliers



Outliers according to bedrooms



Outliers according to garden area

5 most important variables

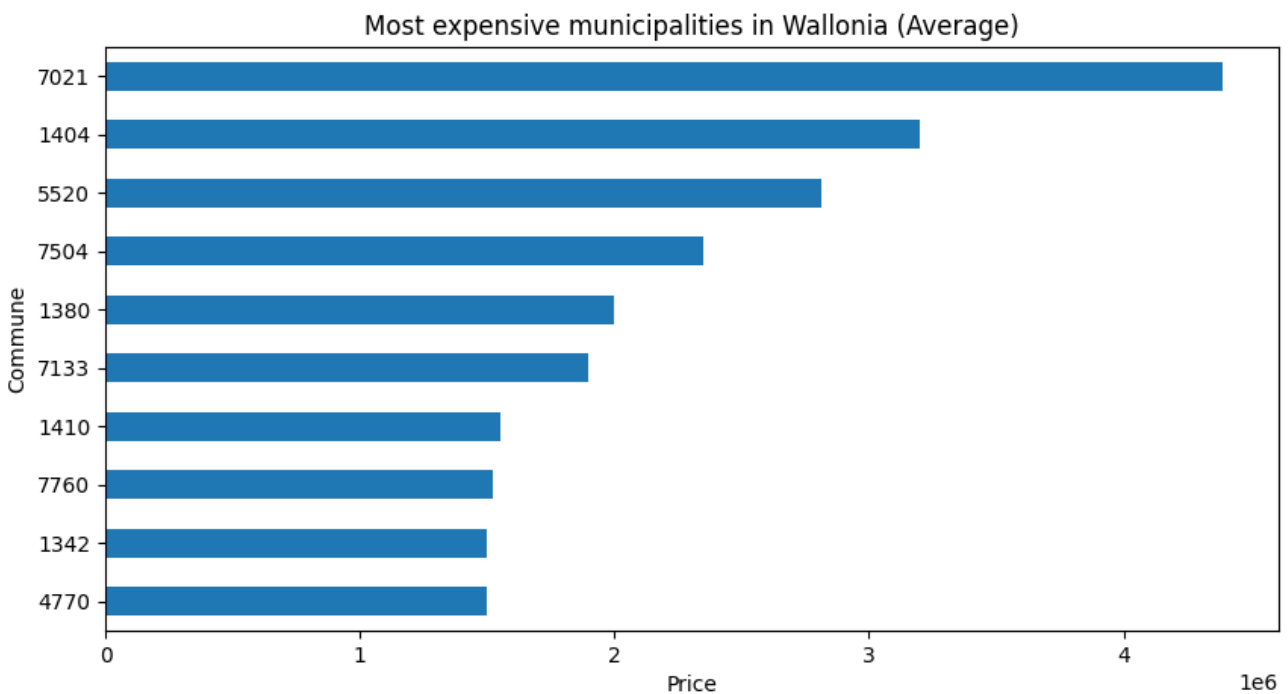
- Price
- Surface
- Bedrooms
- Terrace area
- Surface of the plot

Most expensive municipalities in Belgium

	locality	proprety_type	price	l
3144	3150 Haacht	Apartment block	35000000	
3803	3150 Haacht	House	1950000	
7688	3150 Tildonk	Manor house	1375000	

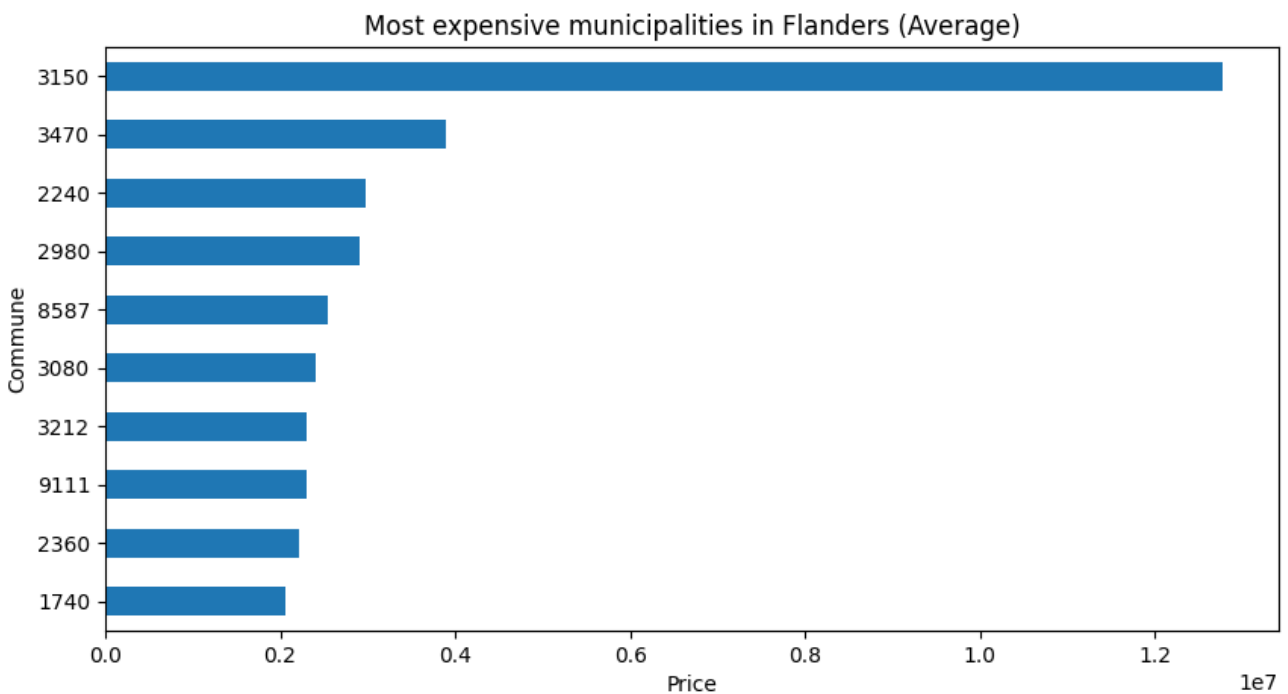
Most expensive municipalities in Wallonia (Average)

- Havré



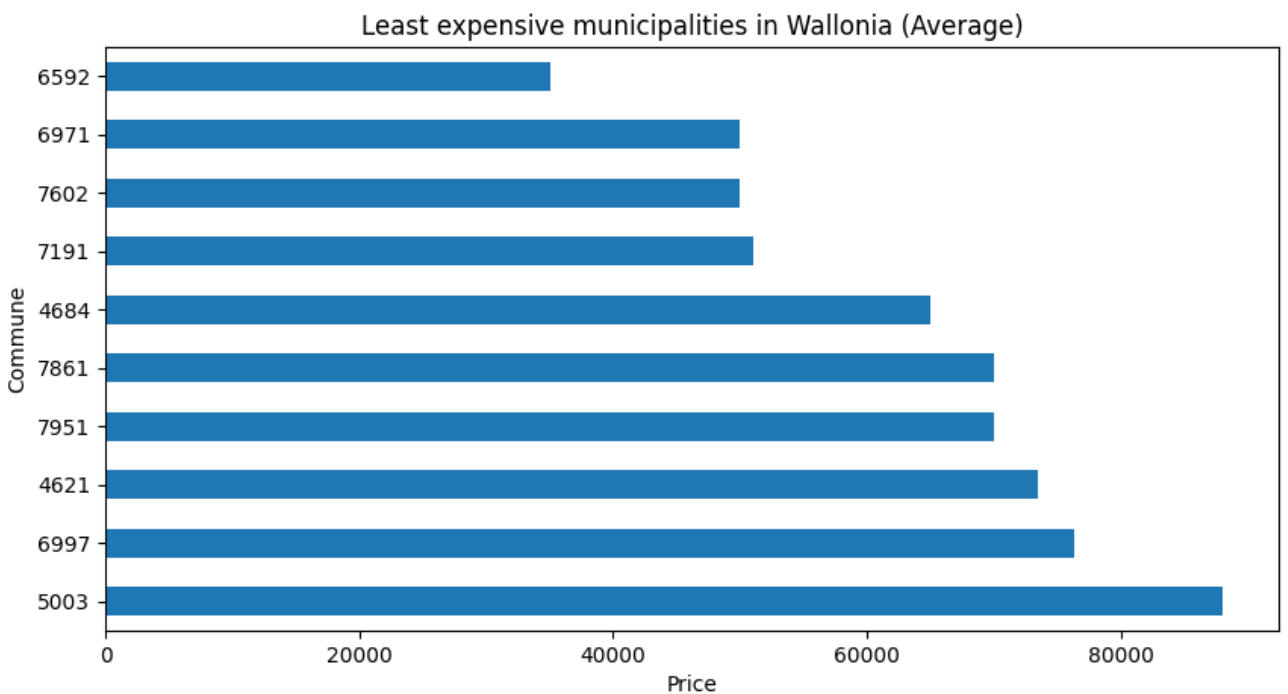
Most expensive municipalities in Flanders (Average)

- Haacht



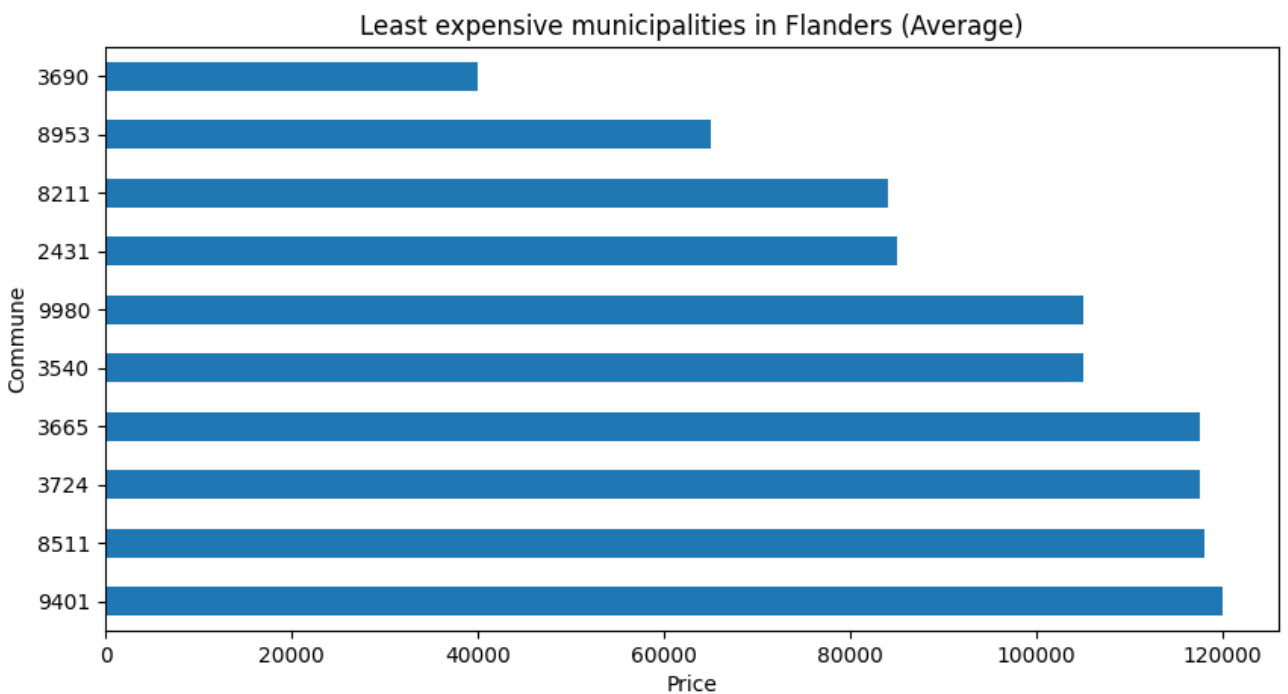
Least expensive municipalities in Wallonia (Average)

- Imbrechies



Least expensive municipalities in Flanders (Average)

- Overijse



Challenges

- Time :D

To Go Further

- Deeper Analysis