NOTARY Transactions DATABASE

Etalab

ETALAB is a Open Source Data
listing all the Real Estate Transactions
done in France during the past 5 Years.
https://app.dvf.etalab.gouv.fr/

That initiative have been developed in France few years after the UK.

Few RE business were developed using that data

Business Opportunities

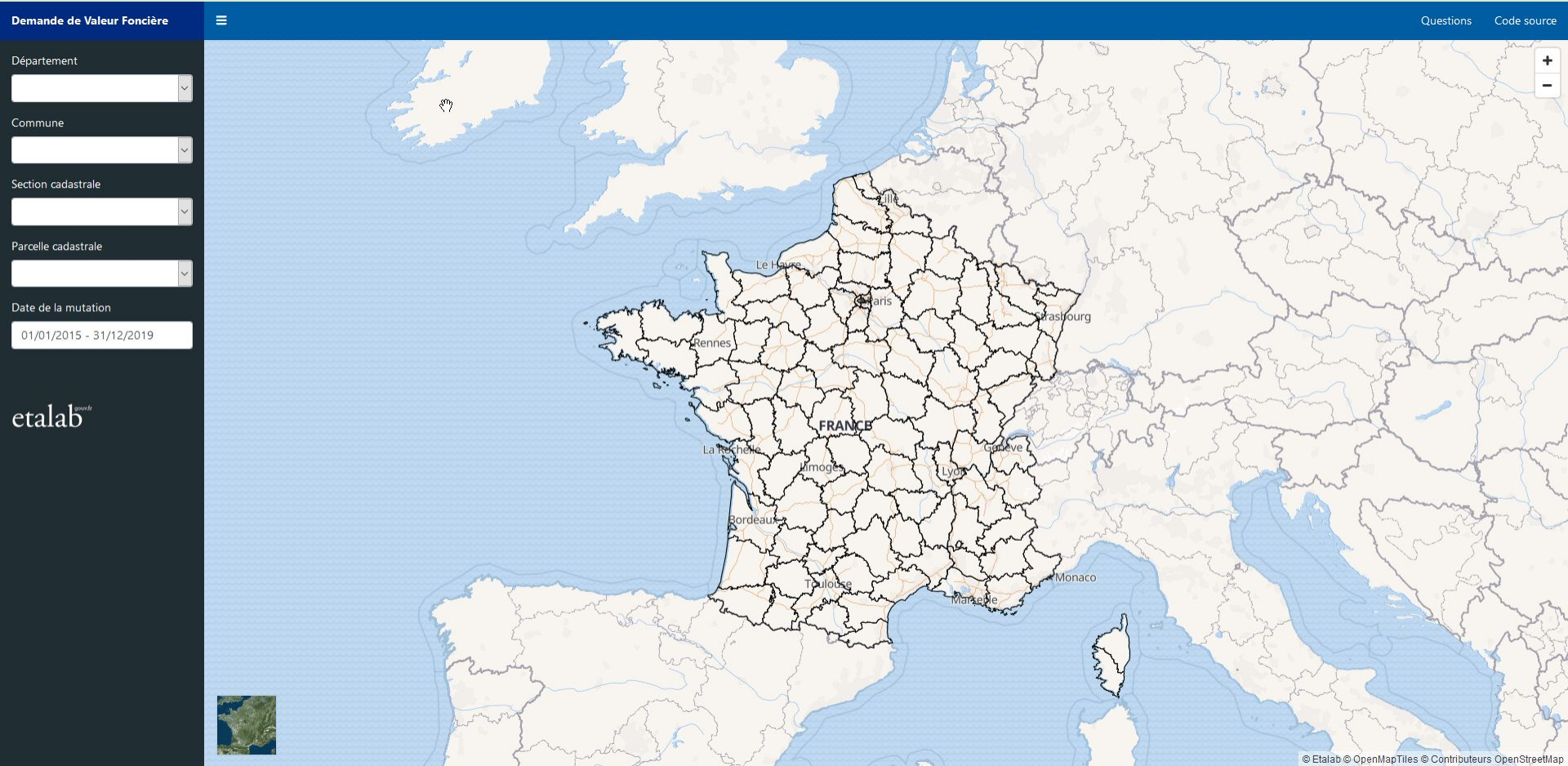
Famous UK Company using similar data
ZOOPLA
https://www.zoopla.co.uk/

Famous French Companies

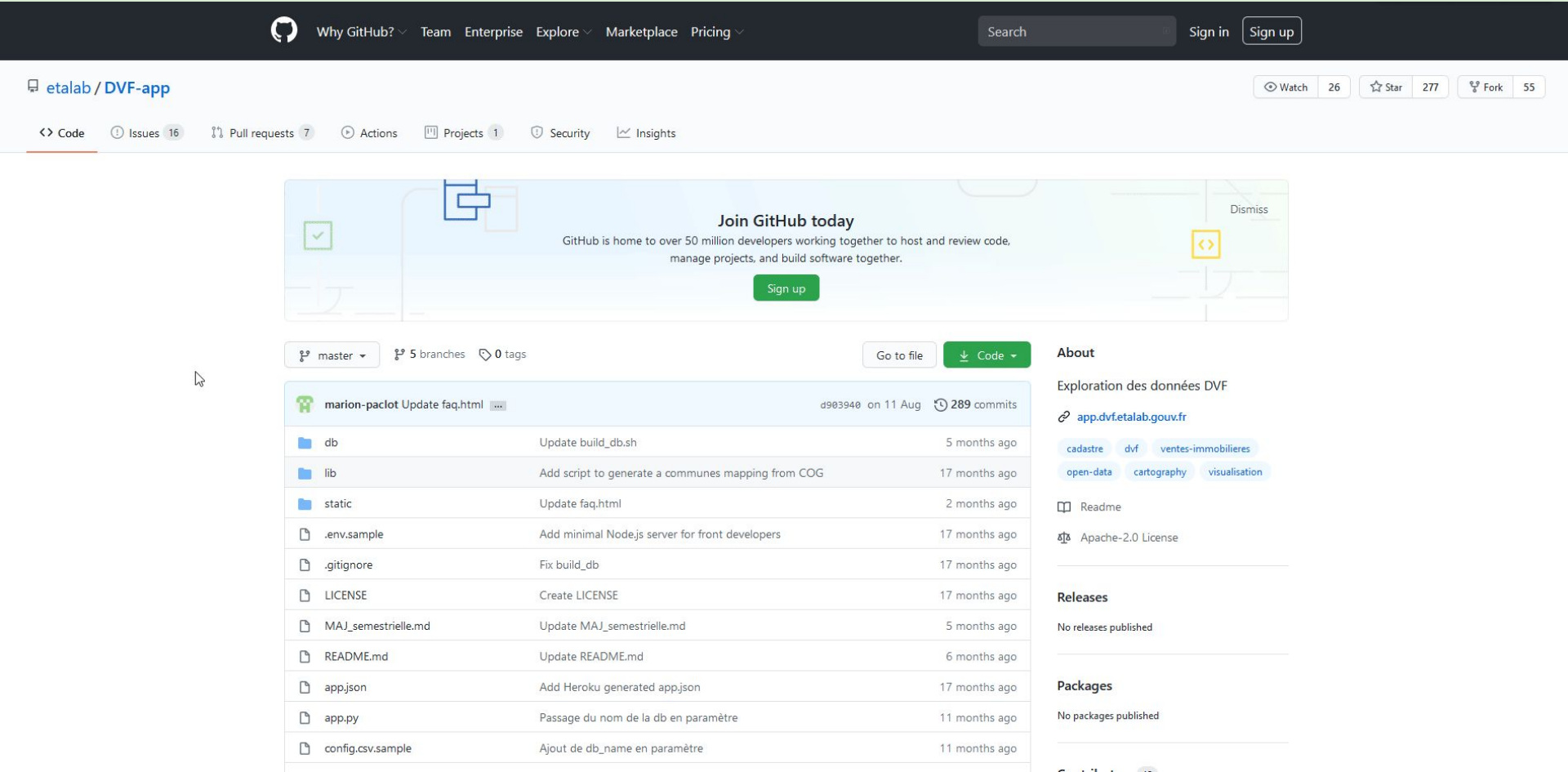
Meilleurs Agents
https://www.meilleursagents.com/

Se Loger
https://www.seloger.com/

Etalab

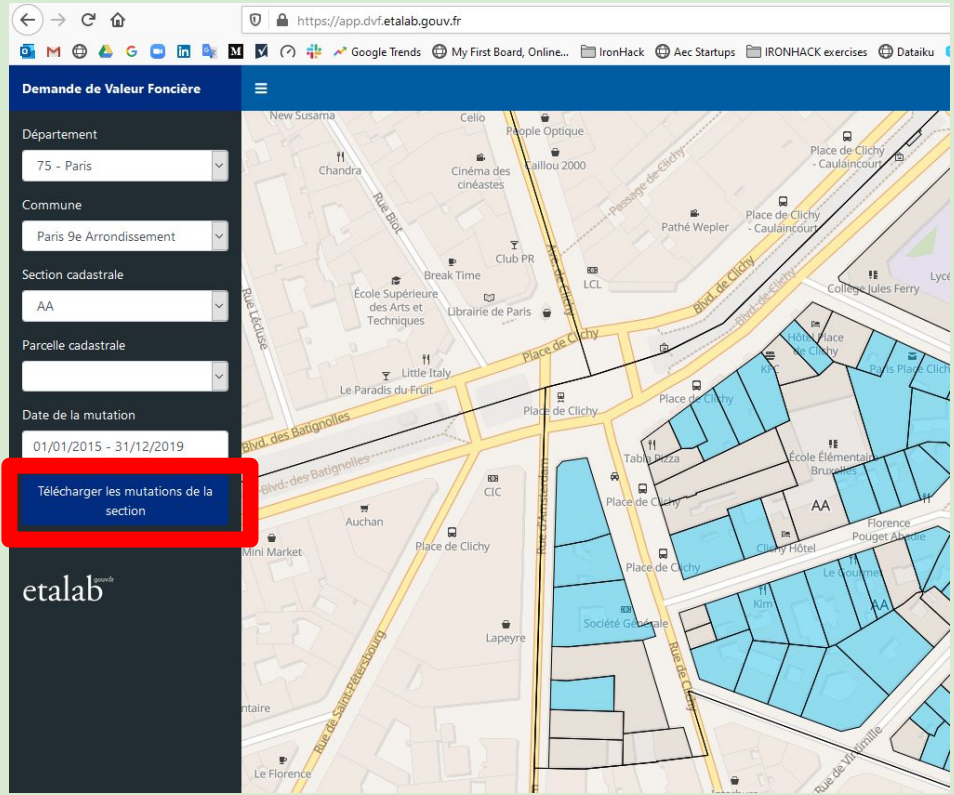

Demande de Valeur Foncière
Questions
Code source
Département
Commune
Section cadastrale
Parcelle cadastrale
Date de la mutation
01/01/2015 - 31/12/2019
etalab
Lille
Le Havre
Paris
Strasbourg
Rennes
FRANCE
La Rochelle
Limoges
Lyon
Genève
Bordeaux
Toulouse
Monaco
Marseille
© Etalab © OpenMapTiles © Contributeurs OpenStreetMap

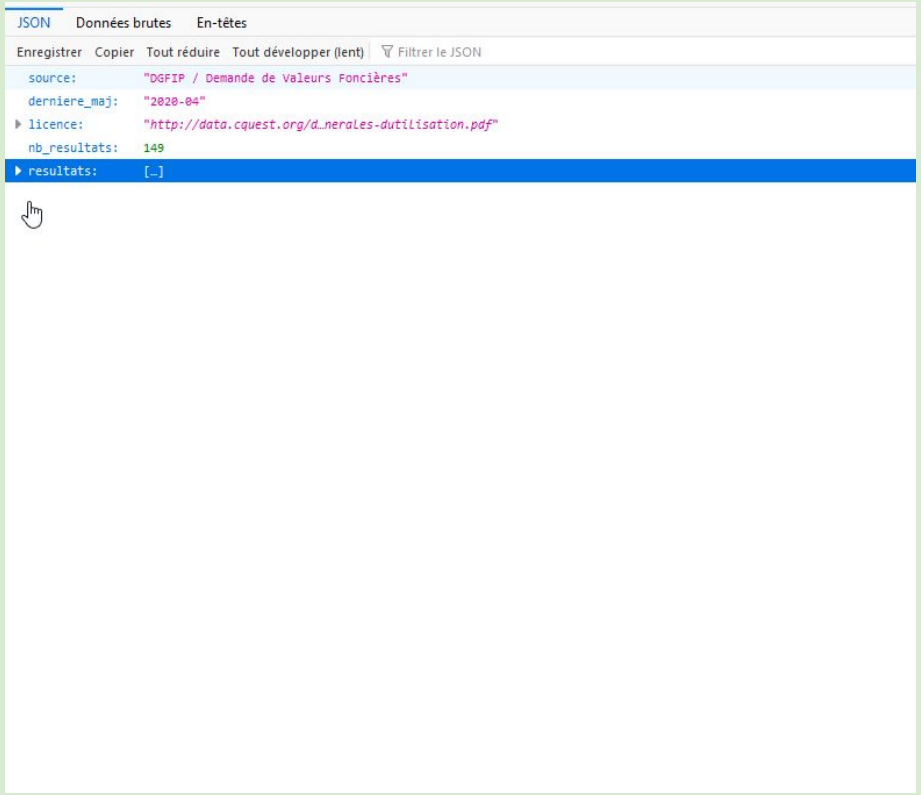
Etalab - GitHub/API



Etalab data = CSV or JSON

http://api.cquest.org/dvf?code_commune=94068
http://api.cquest.org/dvf?section=94068000CQ
http://api.cquest.org/dvf?numero_plan=94068000CQ0110
http://api.cquest.org/dvf?lat=48.85&lon=2.35&dist=200
http://api.cquest.org/dvf?code_postal=89110&type_local=Maison





DataBase

For Paris IXe we focused only on ‘Appartements’ transactions.
array(['Appartement', ~~'Local industriel. commercial ou assimilé'~~, 'Dépendance', ~~'Maison'~~, 'None'], dtype=object).

Check of Data types

Check non values and unique values for the most interesting columns

Deep dive in the ‘classifications’ to update and organize = 'Dépendance' & 'None'

Convert data types to an usable type - from string to int64 / float64

Order columns / drop non required columns / creation now columns for data analysis

Based on our preliminary study drop all non required rows

```
index1 = db[(db['type_local'] == 'Appartement') & (db['surface_carrez_total'] == 0) & (db['surface_reelle_bati'] == 0)].index
index2 = db[(db['type_local'] == 'Dépendance') & (db['surface_carrez_total'] == 0) & (db['surface_carrez_total'] < 9)].index
index3 = db[db['nature_mutation'] == 'Expropriation'].index
index4 = db[db['type_local'] == 'Local industriel. commercial ou assimilé'].index
index5 = db[db['type_local'] == 'Maison'].index
# Warning : we will have to consider surface relle bati if Carrez =0
```

Start data analysis in Python before Tableau

Code

Let’s go to Jupyter Notebook

DataBase

From our data cleaning exercise and organisation we extracted 6 differents database

db_general.to_csv

db_surface_carrez.to_csv

db_surface_carrez_not_outliers.to_csv

db_surface_bati.to_csv

db_surface_bati_not_outliers.to_csv

Paris9e_Expropriations.csv

Tableau

Tableau

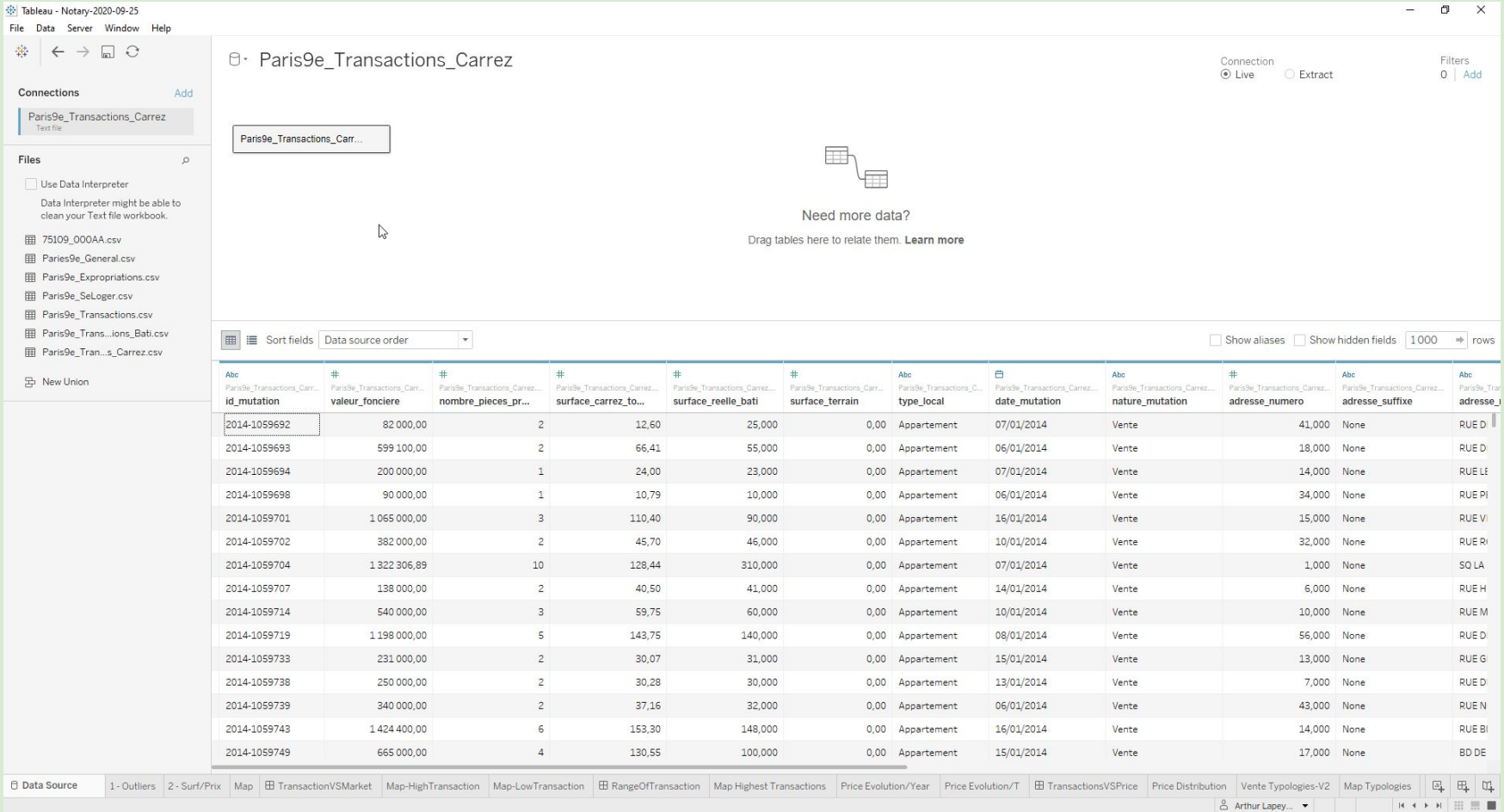


Tableau - Notary-2020-09-25
File Data Server Window Help
Connections Add
Paris9e_Transactions_Carrez
Text file
Files
Use Data Interpreter
Data Interpreter might be able to clean your Text file workbook.
75109_000AA.csv
Paries9e_General.csv
Paris9e_Expropriations.csv
Paris9e_SeLoger.csv
Paris9e_Transactions.csv
Paris9e_Trans...ions_Bati.csv
Paris9e_Tran...s_Carrez.csv
New Union
Paris9e_Transactions_Carrez
Paris9e_Transactions_Carr...
Connection
Live
Extract
Filters
0 | Add
Need more data?
Drag tables here to relate them. Learn more
Sort fields
Data source order
Show aliases
Show hidden fields
1 000
rows
id_mutation
valeur_fonciere
nombre_pieces_pr...
surface_carrez_to...
surface_reelle_bati
surface_terrain
type_local
date_mutation
nature_mutation
adresse_numero
adresse_suffixe
2014-1059692 82 000,00 2 12,60 25,000 0,00 Appartement 07/01/2014 Vente 41,000 None RUE D
2014-1059693 599 100,00 2 66,41 55,000 0,00 Appartement 06/01/2014 Vente 18,000 None RUE D
2014-1059694 200 000,00 1 24,00 23,000 0,00 Appartement 07/01/2014 Vente 14,000 None RUE LE
2014-1059698 90 000,00 1 10,79 10,000 0,00 Appartement 06/01/2014 Vente 34,000 None RUE PI
2014-1059701 1 065 000,00 3 110,40 90,000 0,00 Appartement 16/01/2014 Vente 15,000 None RUE V
2014-1059702 382 000,00 2 45,70 46,000 0,00 Appartement 10/01/2014 Vente 32,000 None RUE R
2014-1059704 1 322 306,89 10 128,44 310,000 0,00 Appartement 07/01/2014 Vente 1,000 None SQ LA
2014-1059707 138 000,00 2 40,50 41,000 0,00 Appartement 14/01/2014 Vente 6,000 None RUE H
2014-1059714 540 000,00 3 59,75 60,000 0,00 Appartement 10/01/2014 Vente 10,000 None RUE M
2014-1059719 1 198 000,00 5 143,75 140,000 0,00 Appartement 08/01/2014 Vente 56,000 None RUE D
2014-1059733 231 000,00 2 30,07 31,000 0,00 Appartement 15/01/2014 Vente 13,000 None RUE G
2014-1059738 250 000,00 2 30,28 30,000 0,00 Appartement 13/01/2014 Vente 7,000 None RUE D
2014-1059739 340 000,00 2 37,16 32,000 0,00 Appartement 06/01/2014 Vente 43,000 None RUE N
2014-1059743 1 424 400,00 6 153,30 148,000 0,00 Appartement 16/01/2014 Vente 14,000 None RUE BI
2014-1059749 665 000,00 4 130,55 100,000 0,00 Appartement 15/01/2014 Vente 17,000 None BD DE
Data Source
1 - Outliers
2 - Surf/Prix
Map
TransactionVSMarket
Map-HighTransaction
Map-LowTransaction
RangeOfTransaction
Map Highest Transactions
Price Evolution/Year
Price Evolution/T
TransactionsVSPrice
Price Distribution
Vente Typologies-V2
Map Typologies
Arthur Lapey...

Tableau

DILEMMA

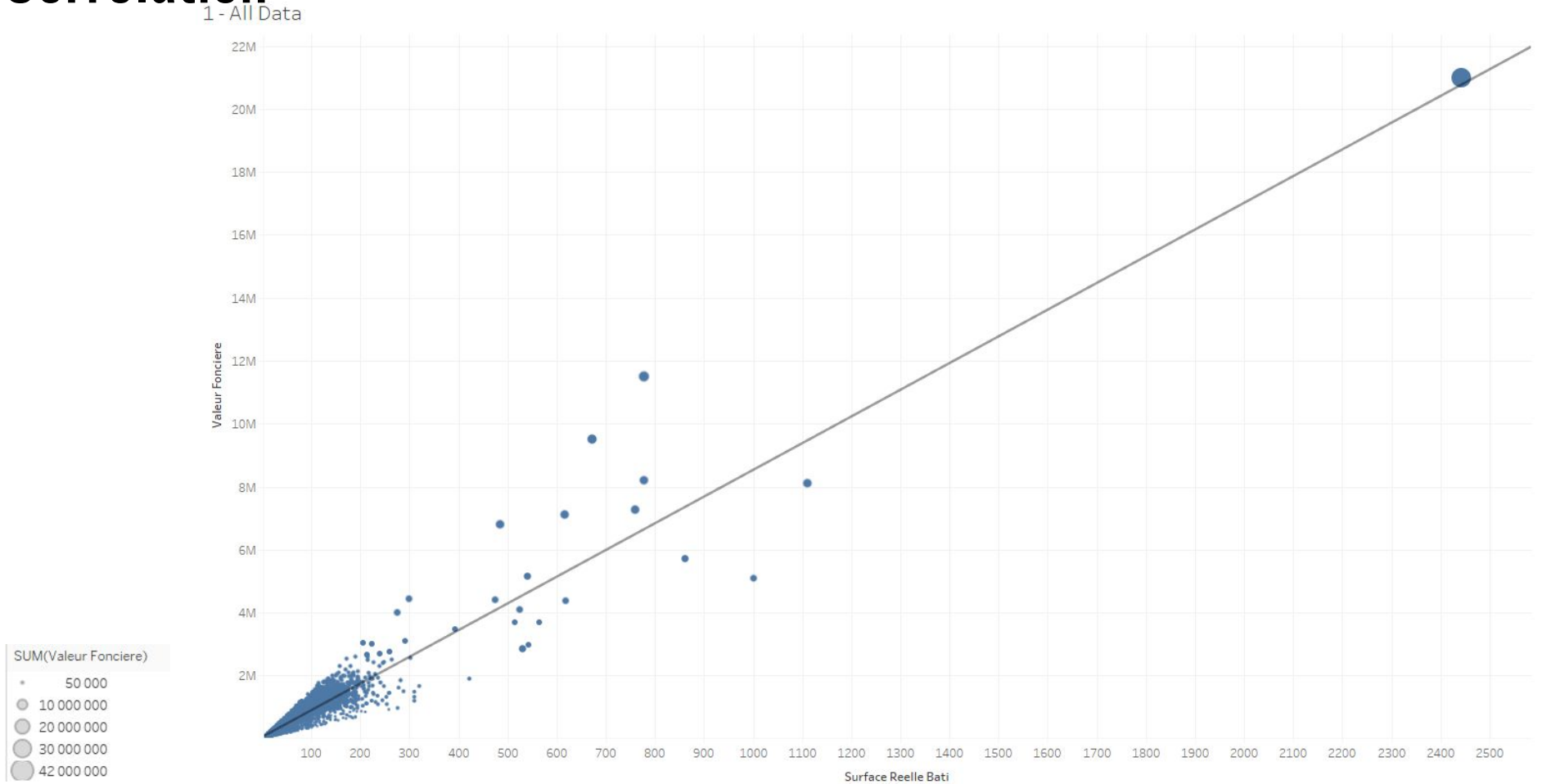
what database to use ?

db_surface_carrez_not_outliers.to_csv

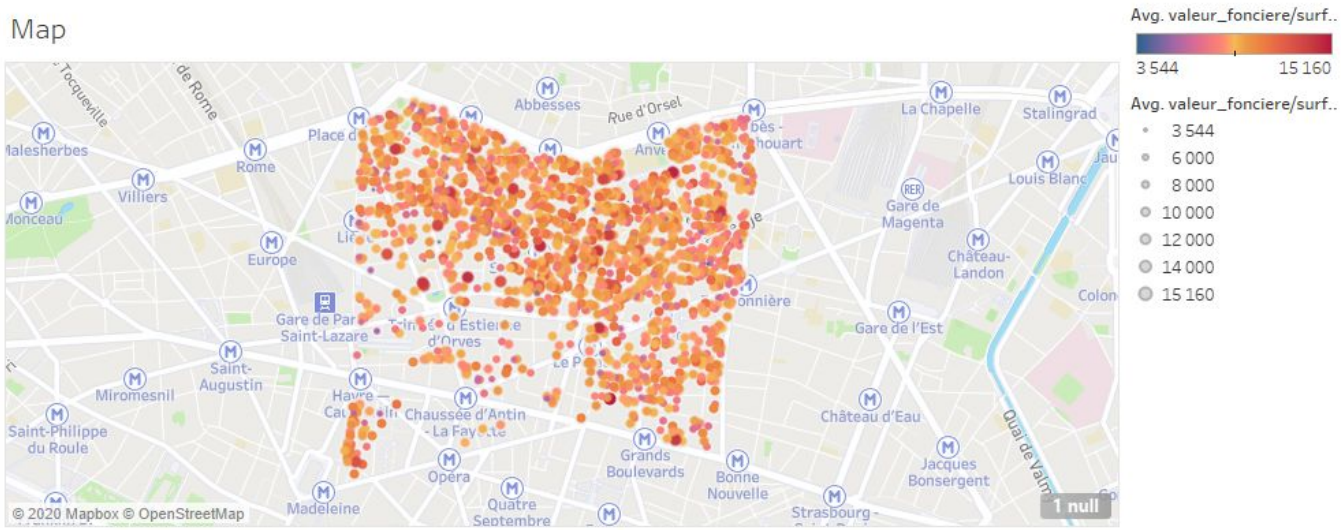
or

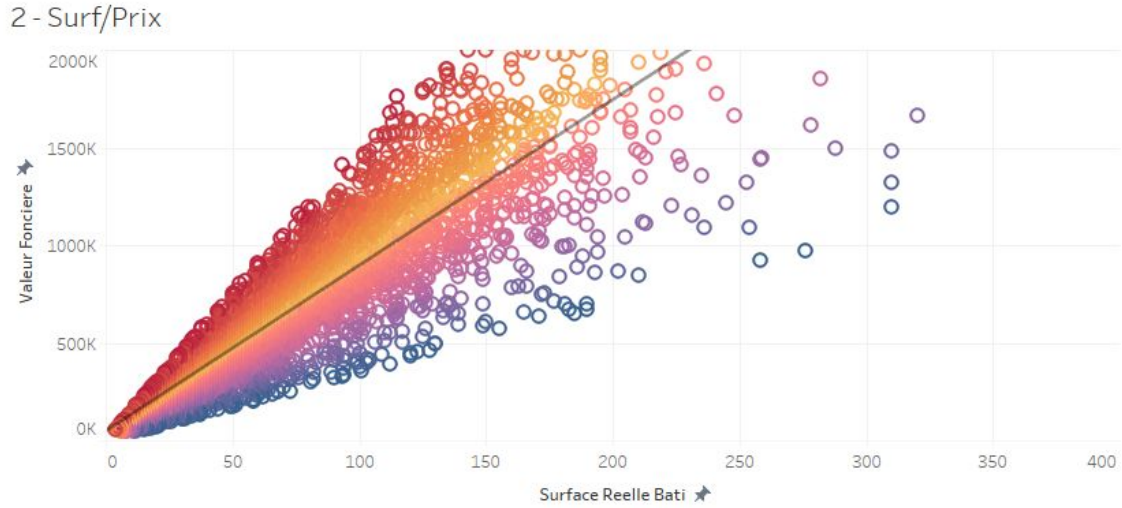
db_surface_bati_not_outliers.to_csv

Correlation



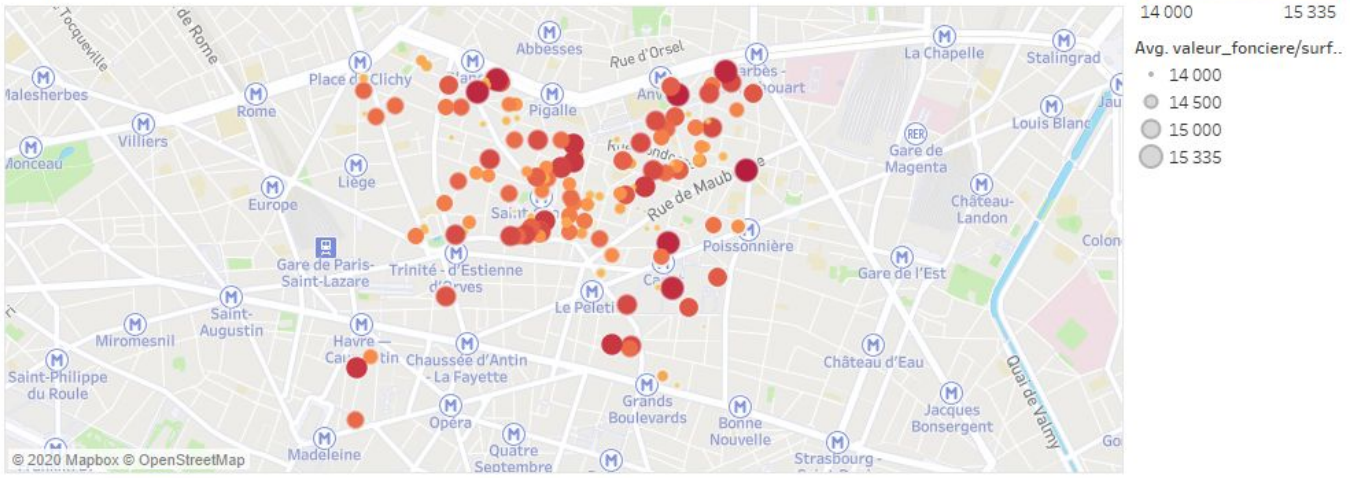
Market & Location



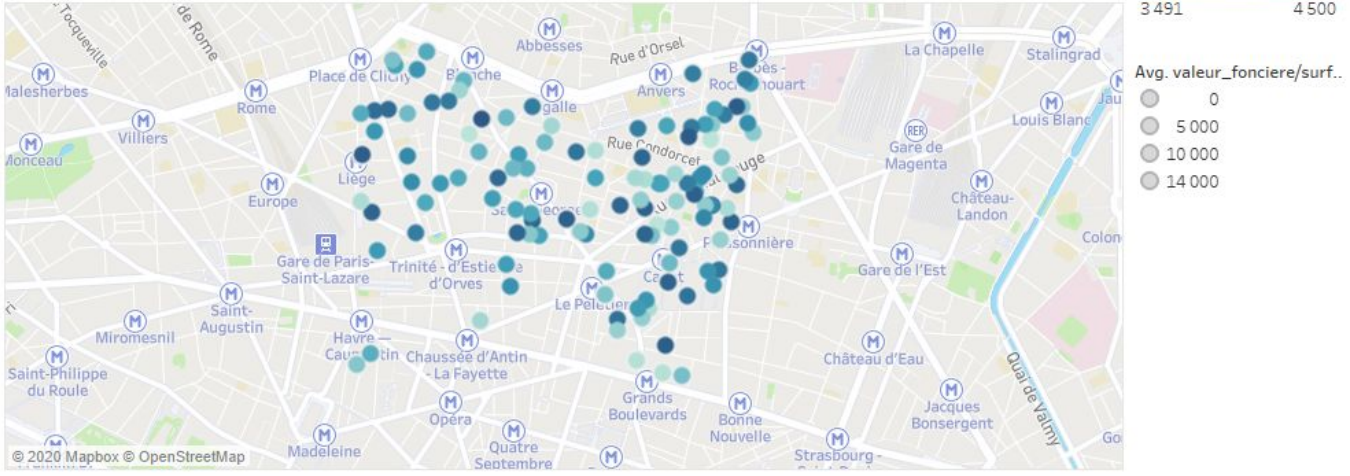


Uniform Distribution

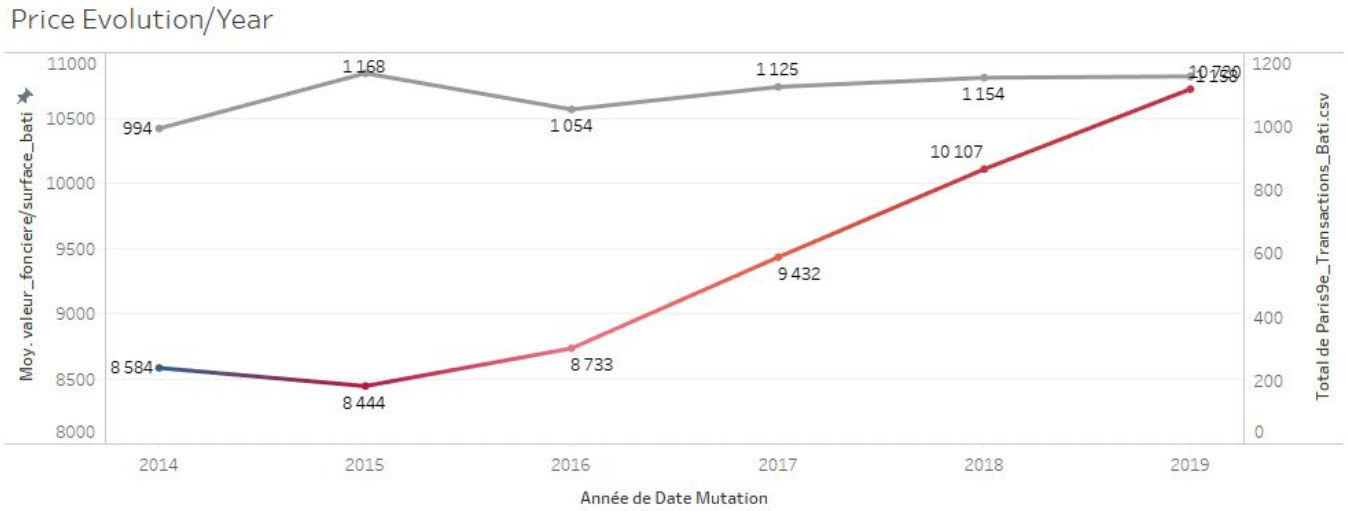
Map-HighTransaction

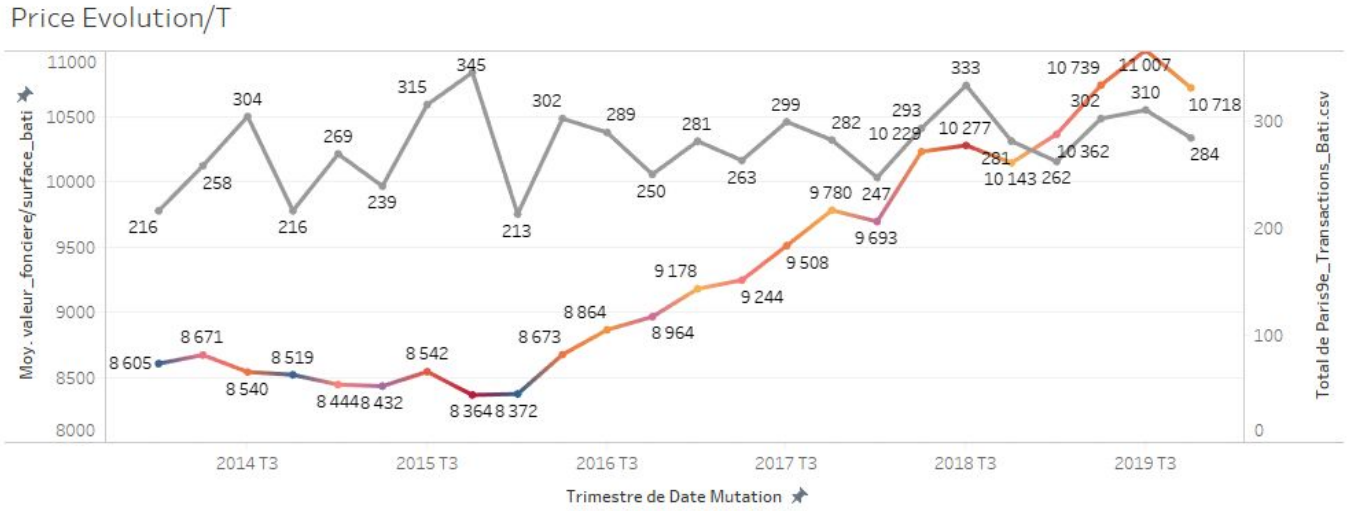


Map-LowTransaction

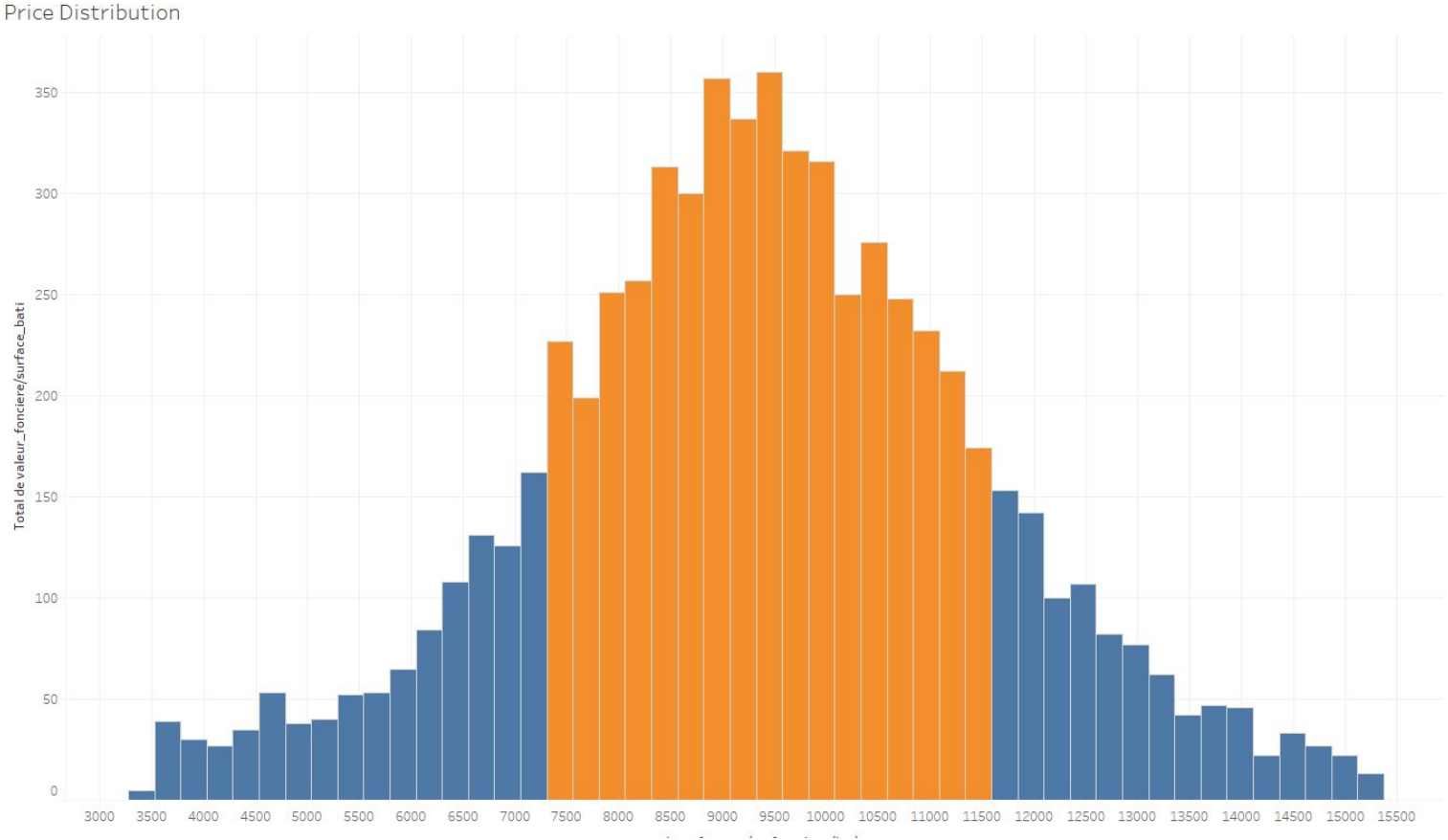


Prices & Transactions



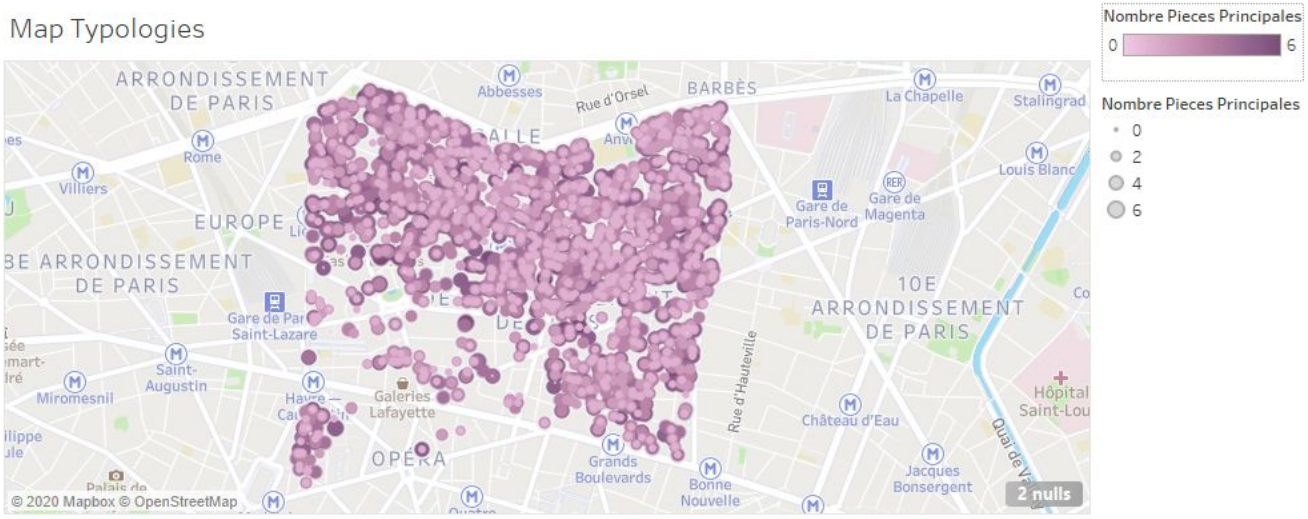


Normal Distribution

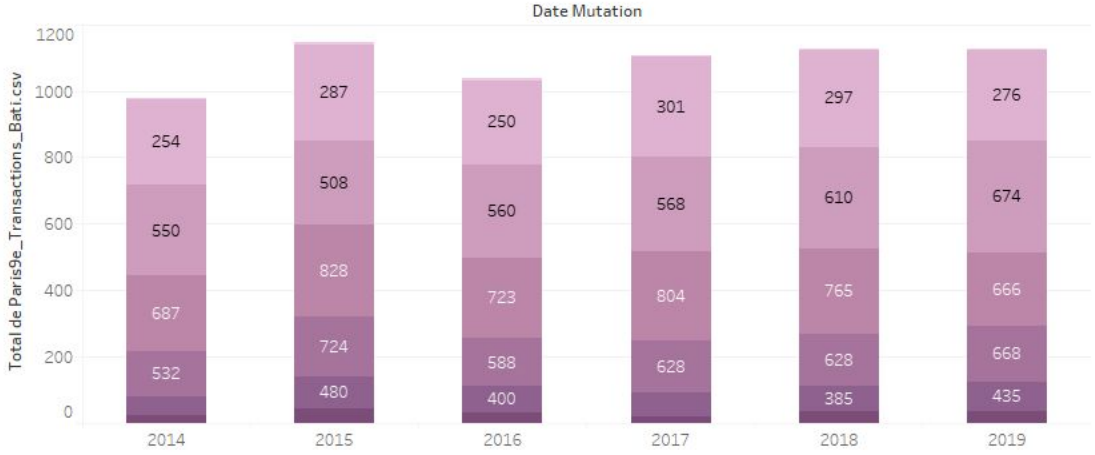


Flat Typology Breakdown

Map Typologies



Vente Typologies-V2



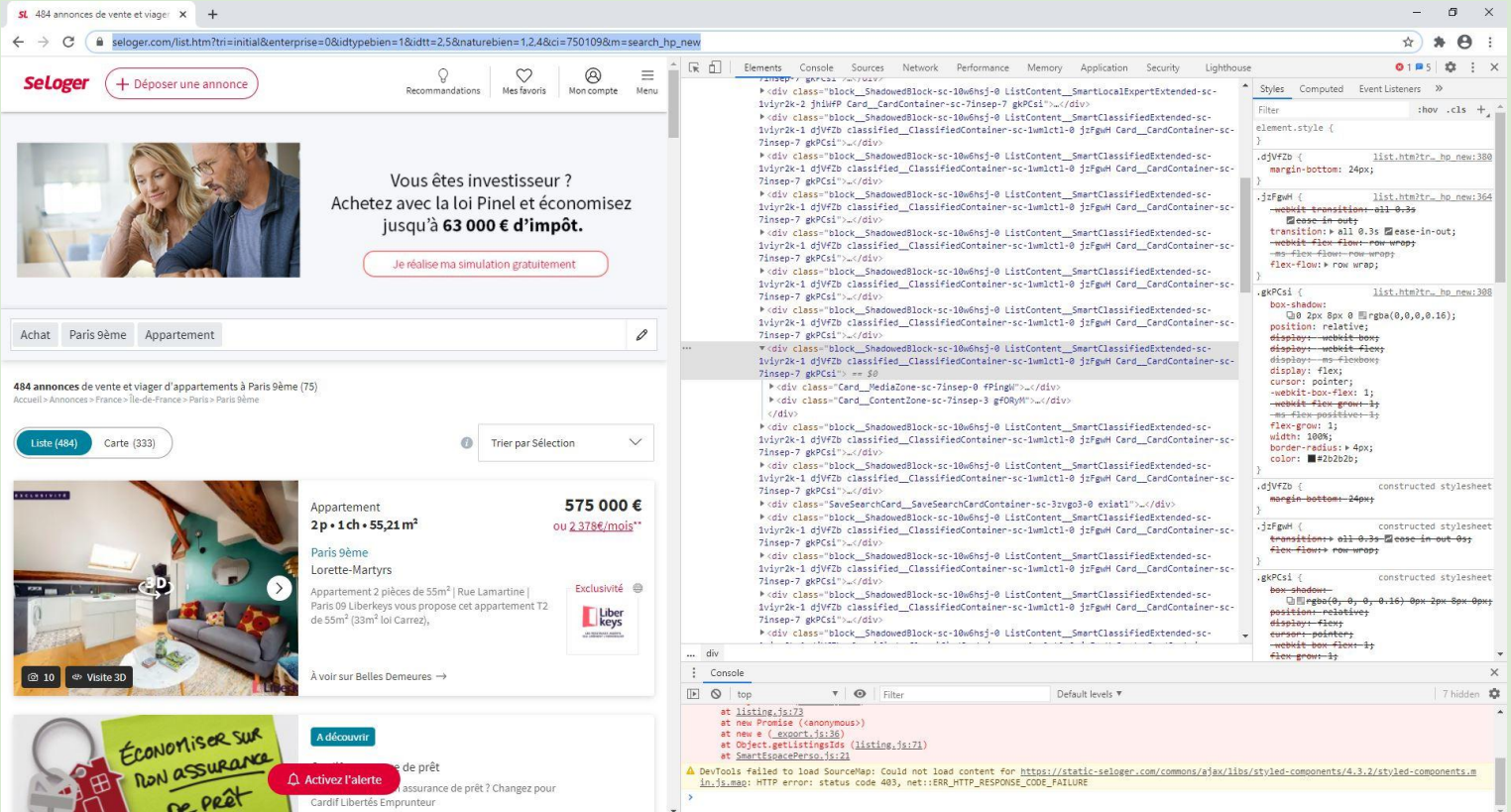
Expropriation

No Surface data provided
We cannot compare
if the ‘Valeur Foncière’ defined was :

- Under Market
- At Market
- Above Market

Database VS Web Scraping

In order to compare our 6 months / 1 year old database
We Web Scraped data for the same area from the WebSite SeLoger.com



SeLoger.com

```
import pandas as pd
import numpy as np
import requests as r
from bs4 import BeautifulSoup
import re
```

```
headers="""accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,app
accept-encoding: gzip, deflate, br
accept-language: fr-FR,fr;q=0.9,en-US;q=0.8,en;q=0.7
cookie: __uzma=12efda3d-e52b-fed2-659e-3921e3abf325; __uzmb=1601042769; __uzmc=510521944541; __uzmd=1601042918; visitId
referer: https://www.seloger.com/
sec-fetch-dest: document
sec-fetch-mode: navigate
sec-fetch-site: same-origin
sec-fetch-user: ?1
upgrade-insecure-requests: 1
user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/85.0.4183.121 Safar
```

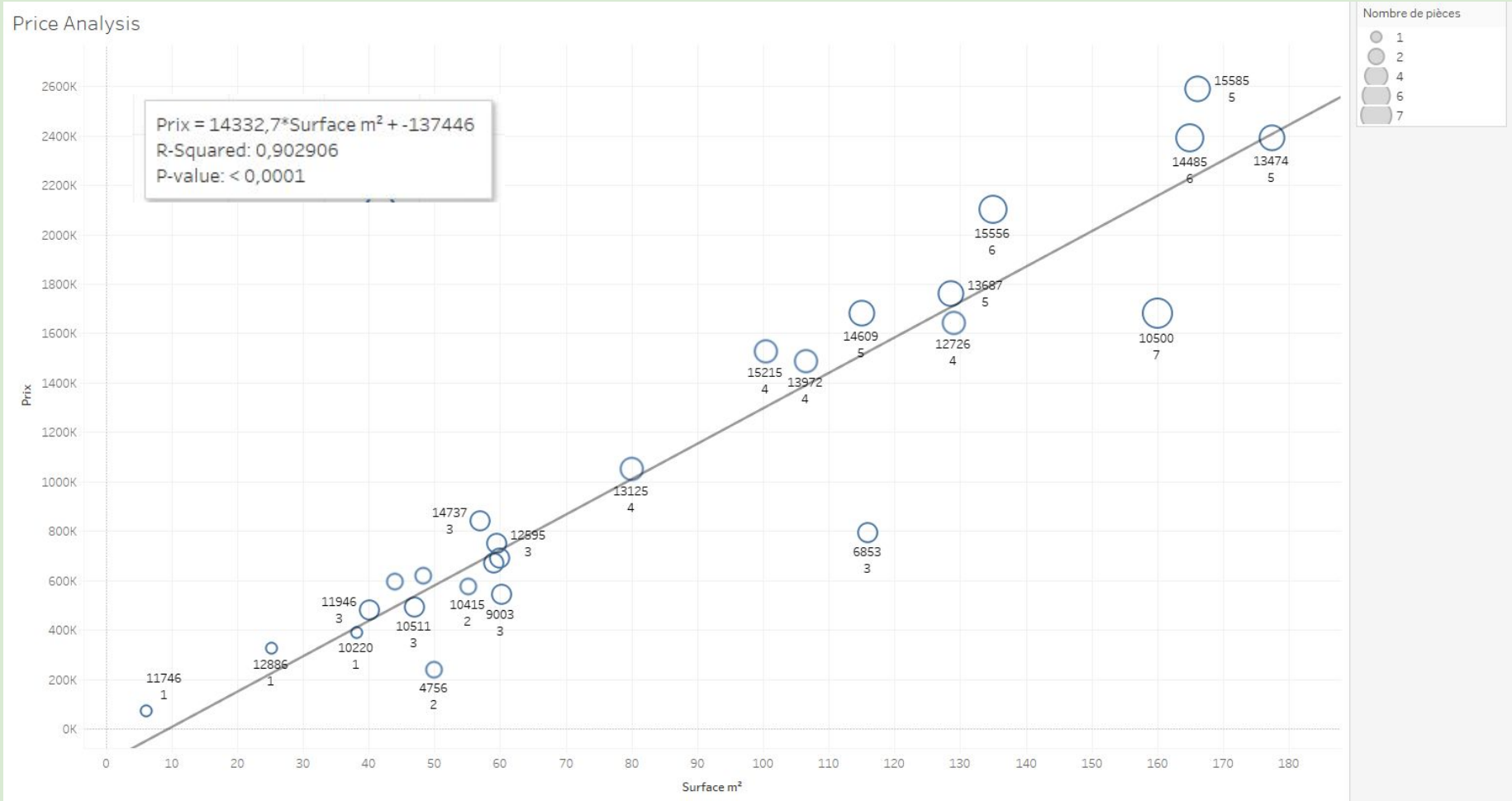
```
headers=dict(i.split(': ') for i in headers.split('\n'))
url='https://www.seloger.com/list.htm?tri=initial&enterprise=0&idtypebien=1&idtt=2,5&naturebien=1,2,4&ci=750109&m=searc
html=r.get(url,headers=headers).content
soup=BeautifulSoup(html)
```

```
rooms=[int(i.strip()[0]) for i in re.findall(r'\d [p]', str(soup.select('ul.ContentZone__Tags-wghbmy-8')))]
surface_m2=[float(i.replace(',','.')) for i in re.findall(r'li\>([0-9,]+) m²\<\/li\>', str(soup.select('ul.ContentZone_
links=[i.get('href') for i in soup.select('.Card__ContentZone-sc-7insep-3 a.CoveringLink-a3s3kt-0')]
price=[int(''.join(i.text.split()[:-1])).strip('bouquet')) for i in soup.select('div.Price__Label-sc-1g9fitq-1')]
```

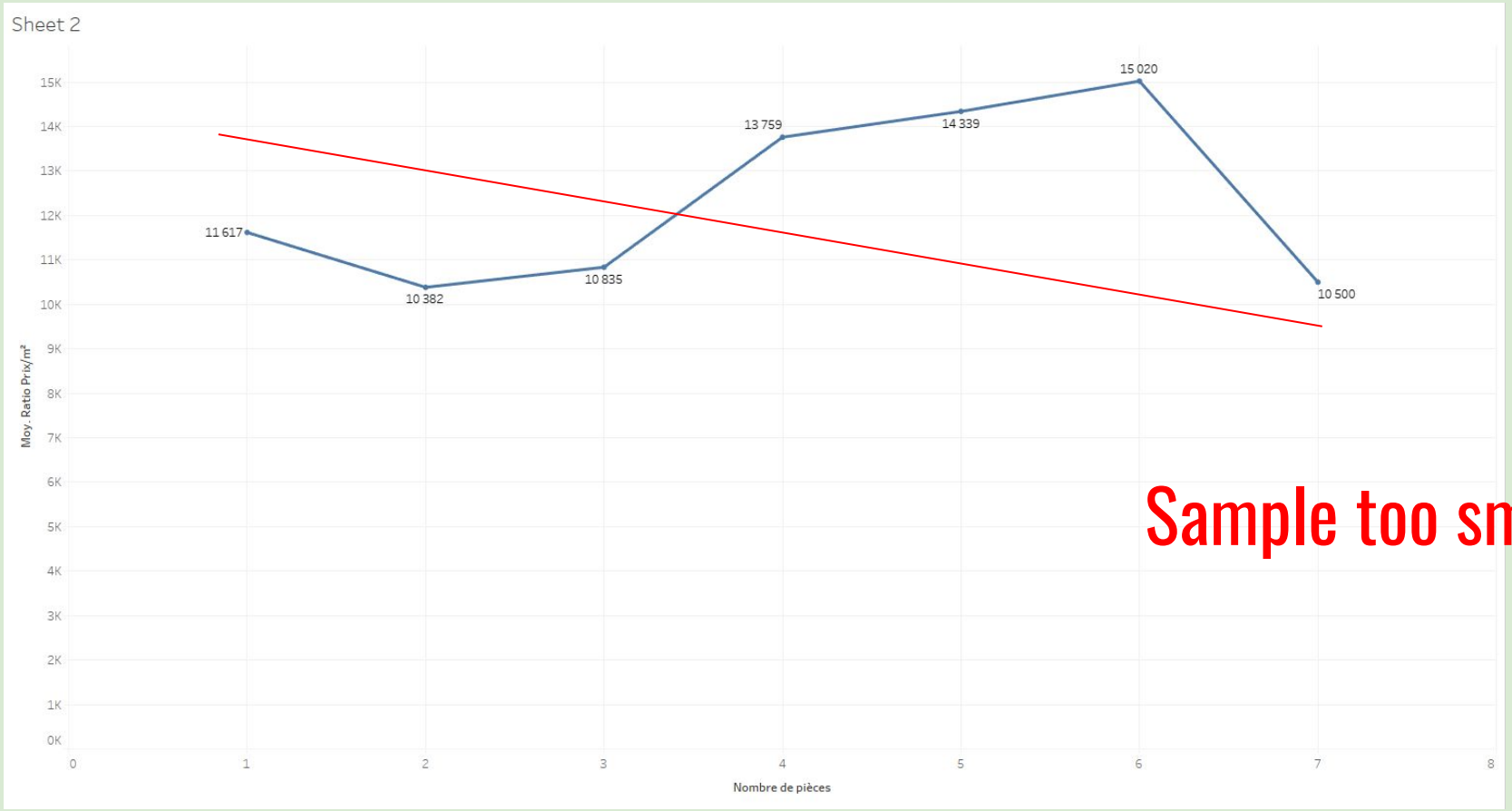
```
df=pd.DataFrame(rooms)
df.rename(columns={0: 'Nombre de pièces'}, inplace=True)
df['Surface m²'] = surface_m2
df['Prix'] = price
df['Lien'] = links
```

```
#export
df.to_csv('Paris9e_SeLoger.csv', sep='/', index=False)
```

27 Offers 28/09/2020

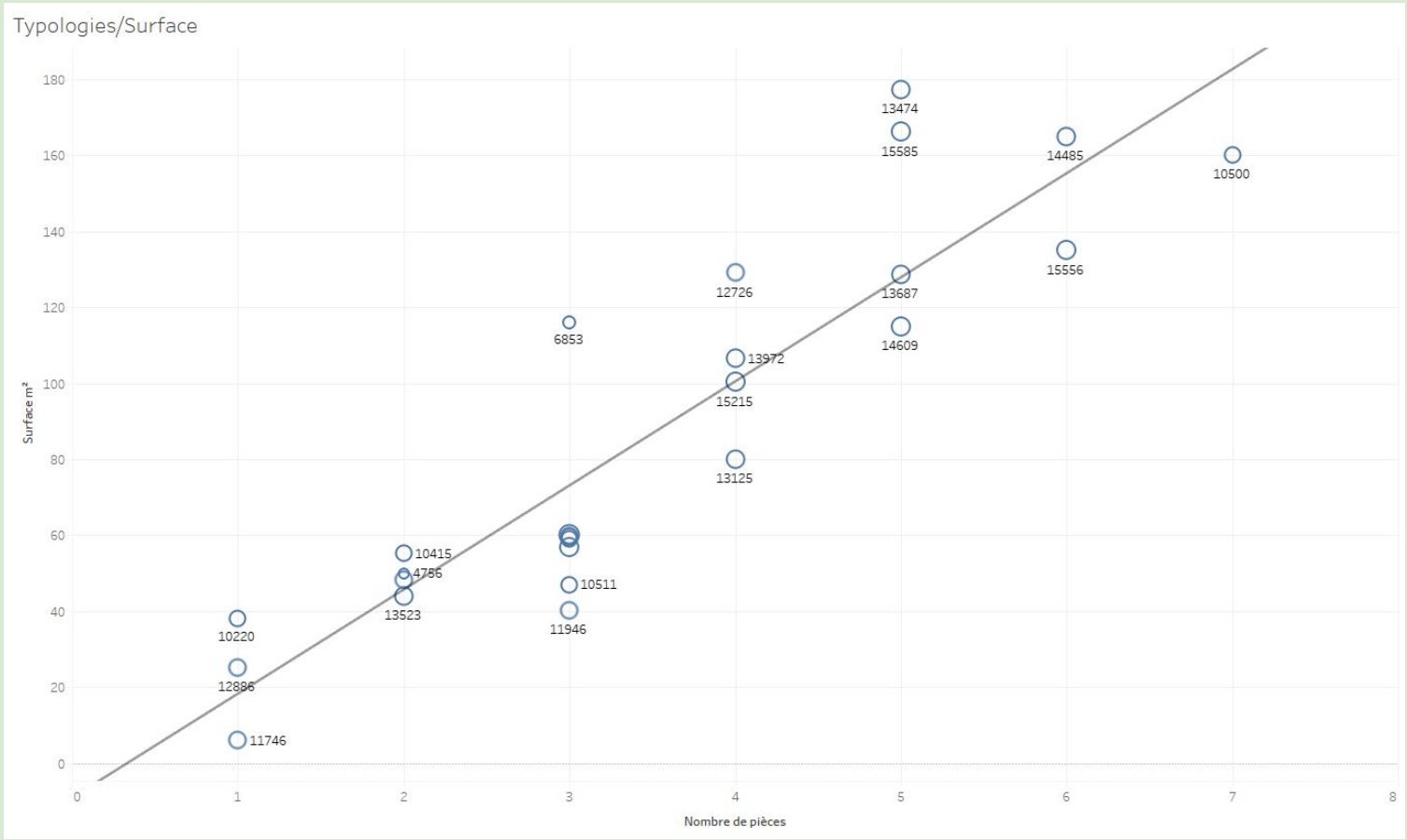


Sample Test - Average Price per Typology



Sample too small

Typology VS Surface



Learnings

- Tableau viz
- Correlation in python
- Hypothesis testing in python
- Data cleaning skills
- Export data to use it in Tableau
- Web scraping skills

Potential Improvements

- Compare more areas in the same city
- Compare with other cities

- Establish a biggest database for this year 2020 and take in account the data coming from website have to be adjusted to get figures closer to transaction price.

- It will be interesting to incorporate to the study others factors (Green spaces / Street Type / Road traffic …) Data we could get from the city website.

- Realise the study for other transaction types (Retail, Factories, Carparks …)