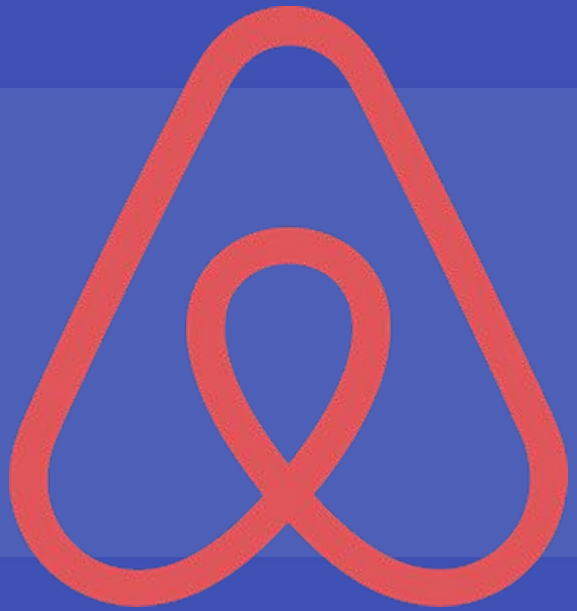


Best Place to Invest

Airbnb Data| AirDNA

Laura Clark Sánchez

“ Which neighborhood in Barcelona would be ideal for purchasing a property as an investment for a short-term rental business? ”

Agenda

1. Dataset
2. Data Cleaning
3. Model
4. Dashboard
5. Conclusions

Dataset

PROPERTY ID

OCCUPANCY RATES

BEDROOMS

ANNUAL REVENUE

NEIGHBORHOOD

BATHROOMS

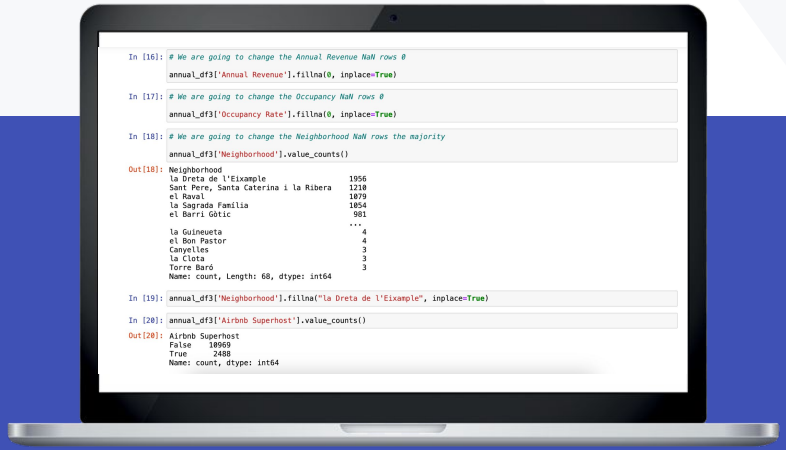
AVERAGE DAILY RATES

AMENITIES

MINIMUM STAY

Data Cleaning

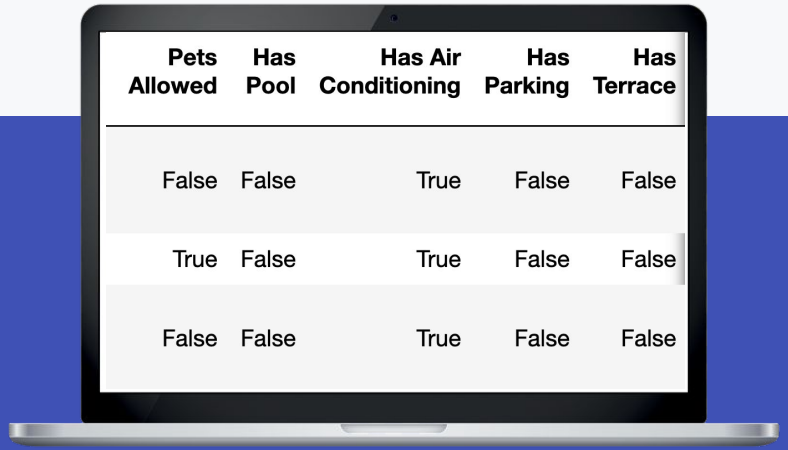
Checking NaNs



```
In [16]: # We are going to change the Annual Revenue NaN rows 0

         annual_df3['Annual Revenue'].fillna(0, inplace=True)

In [17]: # We are going to change the Occupancy NaN rows 0

         annual_df3['Occupancy Rate'].fillna(0, inplace=True)

In [18]: # We are going to change the Neighborhood NaN rows the majority

         annual_df3['Neighborhood'].value_counts()

Out[18]: Neighborhood
         la Dreta de l'Eixample                1956
         Sant Pere, Santa Caterina i la Ribera 1210
         el Raval                              1079
         la Sagrada Família                    1054
         el Barri Gòtic                         981
                                               ...
         la Guineueta                             4
         el Bon Pastor                            4
         Canyelles                                3
         la Clota                                 3
         Torre Baró                               3
         Name: count, Length: 68, dtype: int64

In [19]: annual_df3['Neighborhood'].fillna("la Dreta de l'Eixample", inplace=True)

In [20]: annual_df3['Airbnb Superhost'].value_counts()

Out[20]: Airbnb Superhost
         False    10969
         True      2488
         Name: count, dtype: int64
```

Checked the following columns that have Nans: *Average Daily Rate, Annual Revenue, Occupancy Rate, Airbnb Superhost, Minimum Stay, Pets Allowed*

Adding new columns



Pets Allowed	Has Pool	Has Air Conditioning	Has Parking	Has Terrace
False	False	True	False	False
True	False	True	False	False
False	False	True	False	False

Added new columns as boolean: *Has Pool, Has Air Conditioning, Has Parking, Has Terrace,* to help with my analysis

What this place offers

Bathroom

Hair dryer

Shampoo

Hot water

Bedroom and laundry

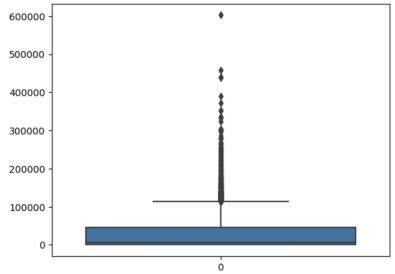
Washer

Dryer

Model

LinearRegression

LinearRegression()



R2_score: 0.39
RMSE: 29855.58467260448
MAE: 20373.953679651448

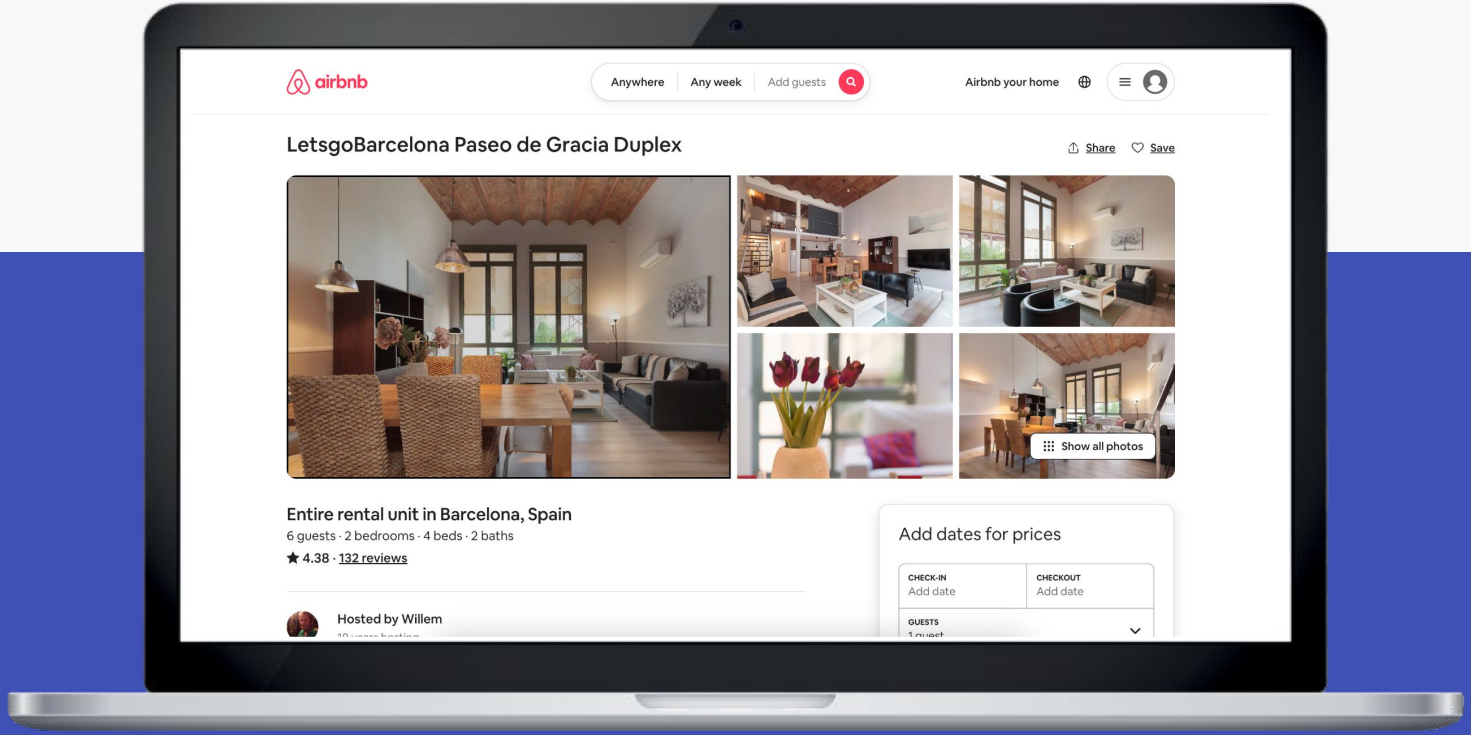
Improve the model

Create a new dataframe removing outliers

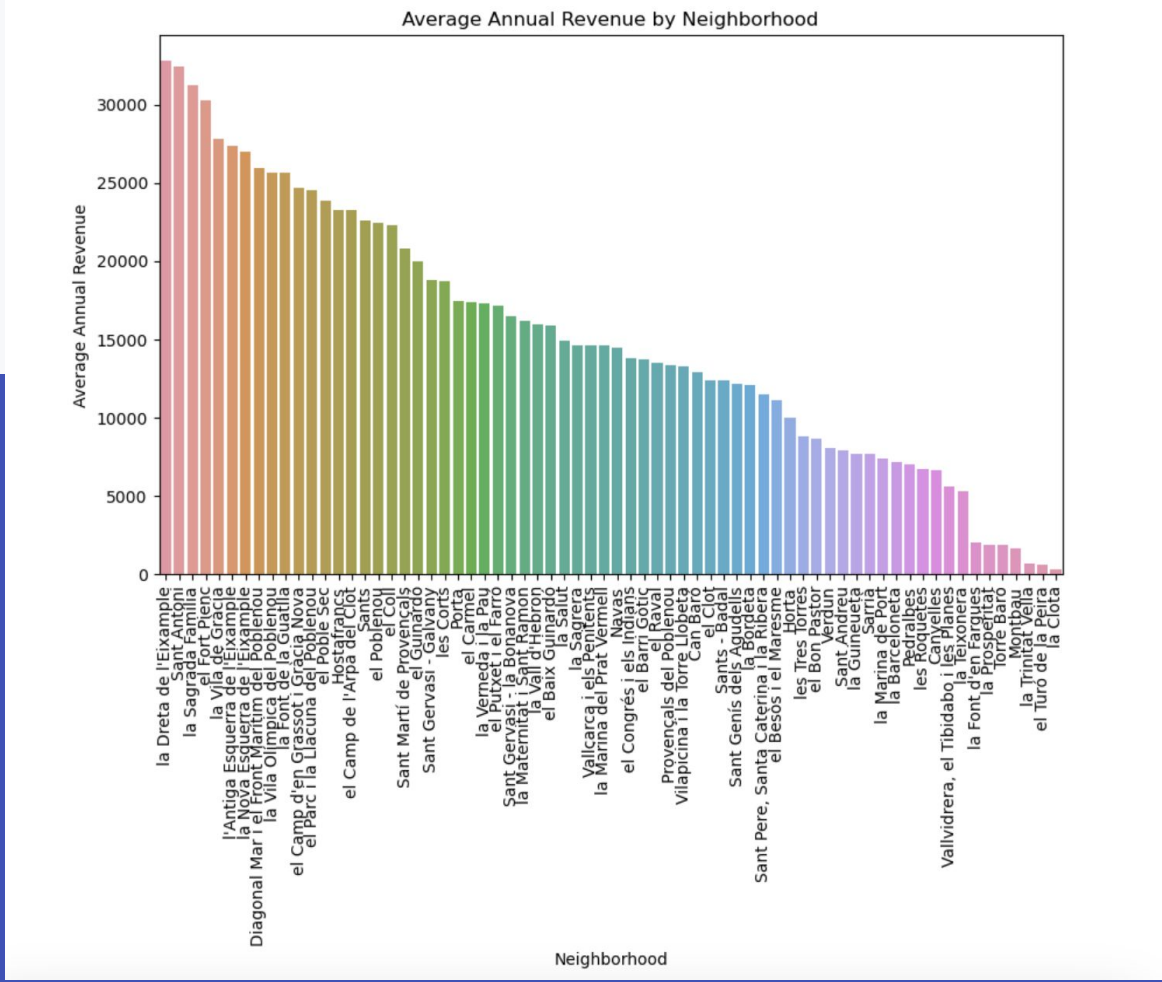
R2_score: 0.9
RMSE: 1.401185622459188
MAE: 0.9188875611766386

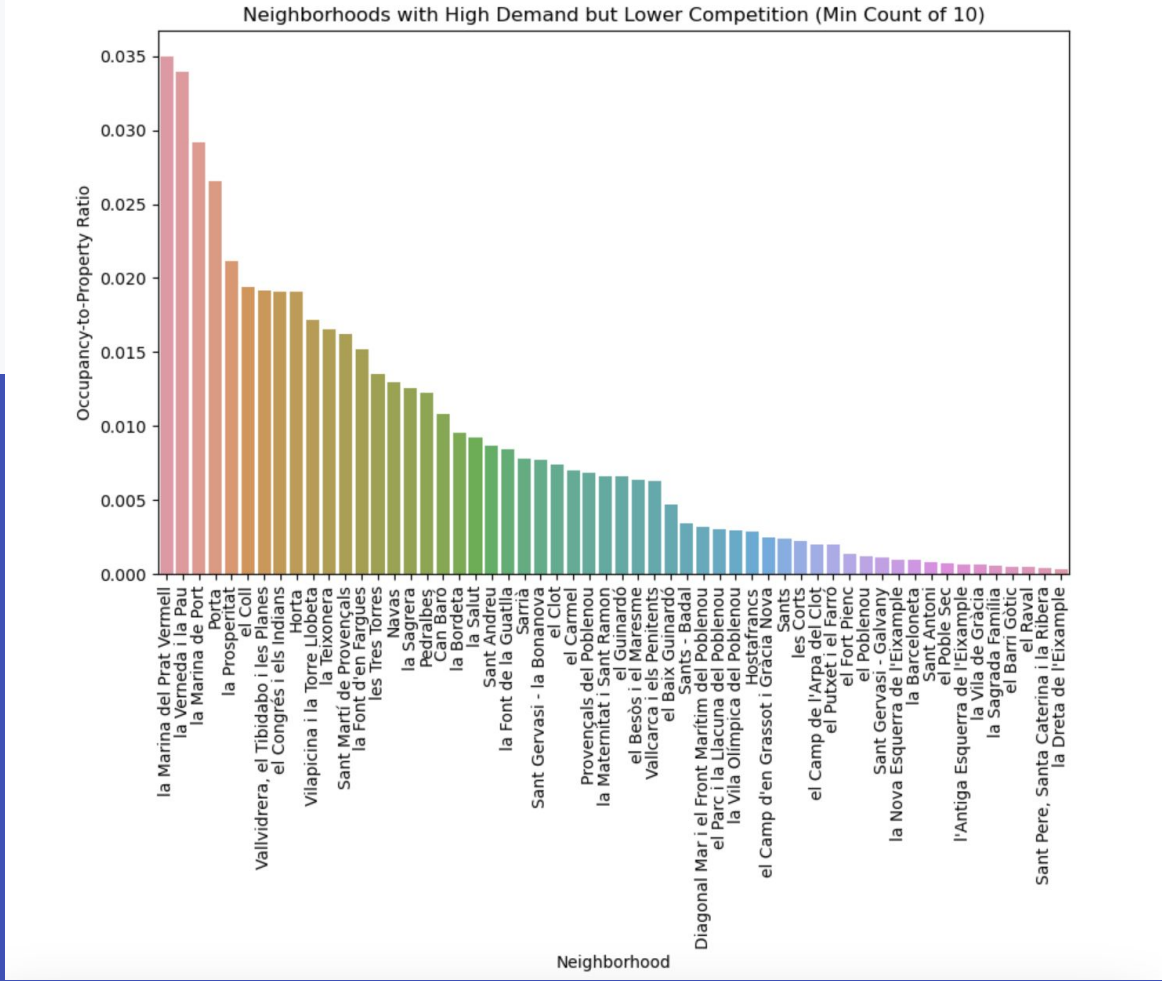
Dashboard

Conclusions



[LetsgoBarcelona Paseo de Gracia Duplex]


Average Annual Revenue by Neighborhood
Average Annual Revenue
0
5000
10000
15000
20000
25000
30000
Neighborhood
la Dreta de l'Eixample
Sant Antoni
la Sagrada Família
el Fort Pienc
la Vila de Gràcia
l'Antiga Esquerra de l'Eixample
la Nova Esquerra de l'Eixample
Diagonal Mar i el Front Marítim del Poblenou
la Vila Olímpica del Poblenou
la Font de la Guatlla
el Camp d'en Grassot i Gràcia Nova
el Parc i la Llacuna del Poblenou
el Poble Sec
Hostafrancs
el Camp de l'Arpa del Clot
Sants
el Poblenou
el Coll
Sant Martí de Provençals
el Guinardó
Sant Gervasi - Galvany
les Corts
Porta
el Carmel
la Verneda i la Pau
el Putxet i el Farró
Sant Gervasi - la Bonanova
la Maternitat i Sant Ramon
el Baix Guinardó
la Vall d'Hebron
la Salut
la Sagrera
Vallcarca i els Penitents
la Marina del Prat Vermell
Navas
el Congrés i els Indians
el Barri Gòtic
el Raval
Provençals del Poblenou
Vilapicina i la Torre Llobeta
Can Baró
el Clot
Sants - Badal
Sant Genís dels Agudells
la Bordeta
Sant Pere, Santa Caterina i la Ribera
el Besòs i el Maresme
Horta
les Tres Torres
el Bon Pastor
Verdun
Sant Andreu
la Guineueta
Sarrià
la Marina de Port
la Barceloneta
Pedralbes
les Roquetes
Canyelles
Vallvidrera, el Tibidabo i les Planes
la Teixonera
la Font d'en Fargues
la Prosperitat
Torre Baró
Montbau
la Trinitat Vella
el Turó de la Peira
la Clota


Neighborhoods with High Demand but Lower Competition (Min Count of 10)
Occupancy-to-Property Ratio
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
la Marina del Prat Vermell
la Verneda i la Pau
la Marina de Port
Porta
la Prosperitat
el Coll
Vallvidrera, el Tibidabo i les Planes
el Congrés i els Indians
Horta
Vilapicina i la Torre Llobeta
la Teixonera
Sant Martí de Provençals
la Font d'en Fargues
les Tres Torres
Navas
la Sagrera
Pedralbes
Can Baró
la Bordeta
la Salut
Sant Andreu
la Font de la Guatlla
Sarrià
Sant Gervasi - la Bonanova
el Clot
el Carmel
Provençals del Poblenou
la Maternitat i Sant Ramon
el Guinardó
el Besòs i el Maresme
Vallcarca i els Penitents
el Baix Guinardó
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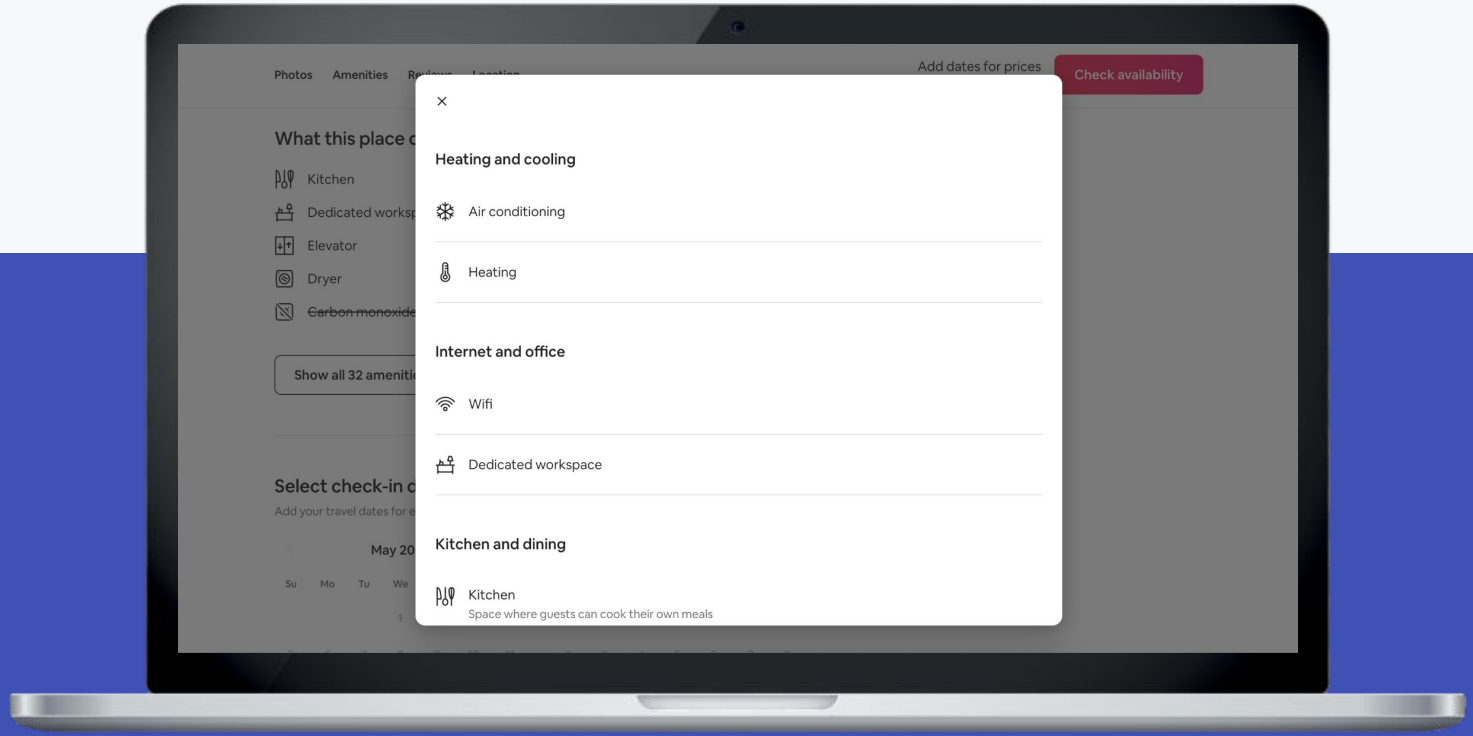
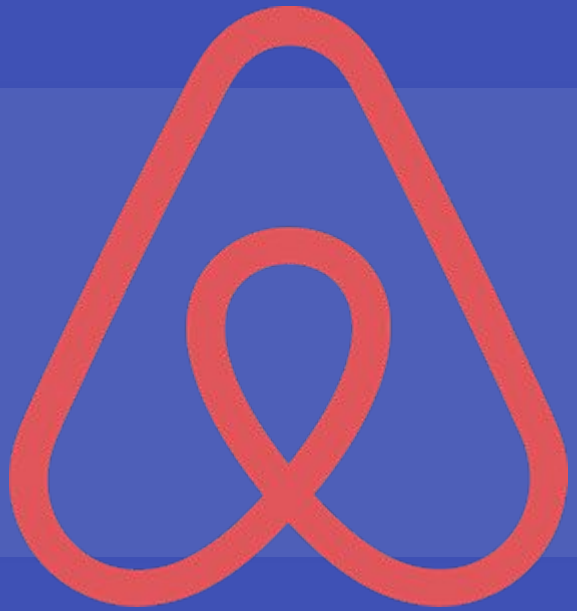
Diagonal Mar i el Front Marítim del Poblenou
el Parc i la Llacuna del Poblenou
la Vila Olímpica del Poblenou
Hostafrancs
el Camp d'en Grassot i Gràcia Nova
Sants
les Corts
el Camp de l'Arpa del Clot
el Putxet i el Farró
el Fort Pienc
el Poblenou
Sant Gervasi - Galvany
la Nova Esquerra de l'Eixample
la Barceloneta
Sant Antoni
el Poble Sec
l'Antiga Esquerra de l'Eixample
la Vila de Gràcia
la Sagrada Família
el Barri Gòtic
el Raval
Sant Pere, Santa Caterina i la Ribera
la Dreta de l'Eixample
Neighborhood


Photos
Amenities
Add dates for prices
Check availability
Kitchen
Elevator
Dryer
Heating and cooling
Air conditioning
Heating
Internet and office
Wifi
Dedicated workspace
Kitchen and dining
Kitchen
Space where guests can cook their own meals



Thank you!