

ASBS Apartments in Madrid

Analyze Smart Buy Smart...





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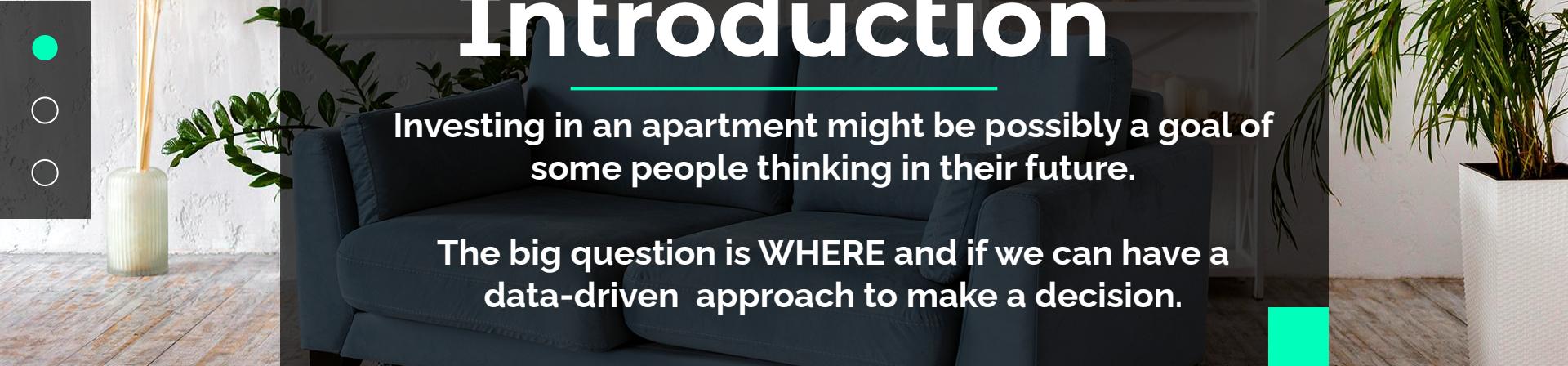
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Rating system by
hypothesis & multilinear
regression model



01 Introduction



Investing in an apartment might be possibly a goal of some people thinking in their future.

The big question is WHERE and if we can have a data-driven approach to make a decision.



Objective

Select the best neighborhood where to buy an apartment based on statistical data analysis by taking a sample.

Problem

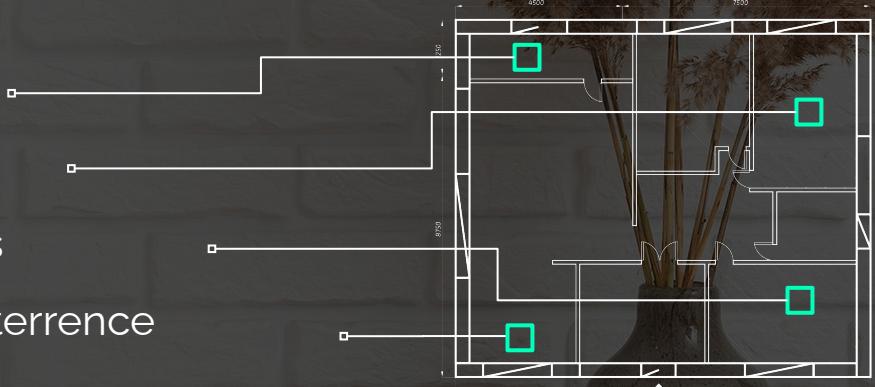
- **City: Madrid**

- **Neighborhoods : 131**

- **Budget : limited 300ks approx**

- **Apartments: +100, daily updates**

- **Characteristics : 2 room,1 floor,terrence**



Solution

Neighborhood rating system using a **statistical** method based on a **sample** of 2 potential neighborhoods.

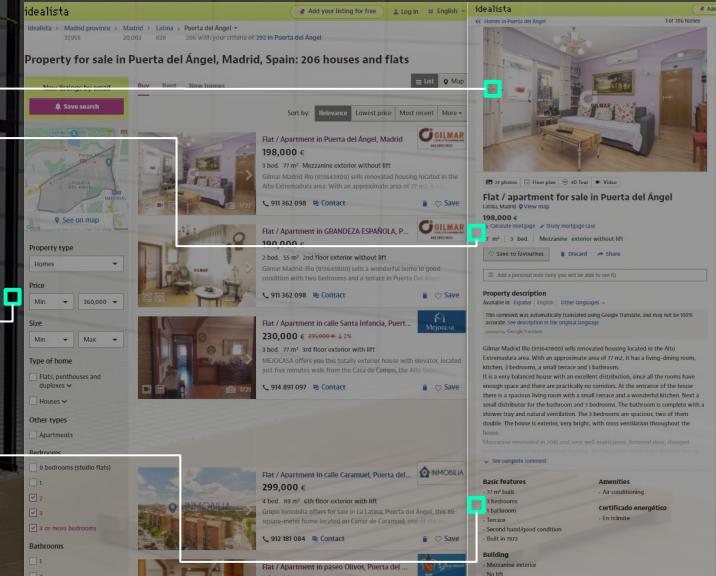
- Puerta del Angel
- Comillas

Sample

Source: Idealista.es
Sample cost: 450€

Sample process:

- Initial filtering
 - Max price = budget
 - Minimal features: No ground floor, 2 rooms min.
- Capture of 16 features per apartment
- Inspection and condition qualification by photos
 - Kitchen
 - Bathroom
 - Overall



Flat / Apartment in Puerita del Ángel, Madrid, Spain: 206 houses and flats

Sort by: Reference, Lowest price, Most recent, More...

Flat / Apartment in Puerita del Ángel, Madrid

198,000 €
2 bed, 2 bath - Mezzanine exterior without IFT

Flat / Apartment in Grandesa Española, P...

198,000 €
2 bed, 2 bath - Mezzanine exterior without IFT

Flat / Apartment in calle Santa Infancia, Puerto...

230,000 €
3 bed, 2 bath - 2nd floor exterior with IFT

■ **Puerta del Ángel (40 obs)**

■ **Comillas (37 obs)**

Preliminary questions



Which neighborhood is cheaper?



Which one has the best
price/quality?



In terms of space (m²), is any of
them more spacious ?



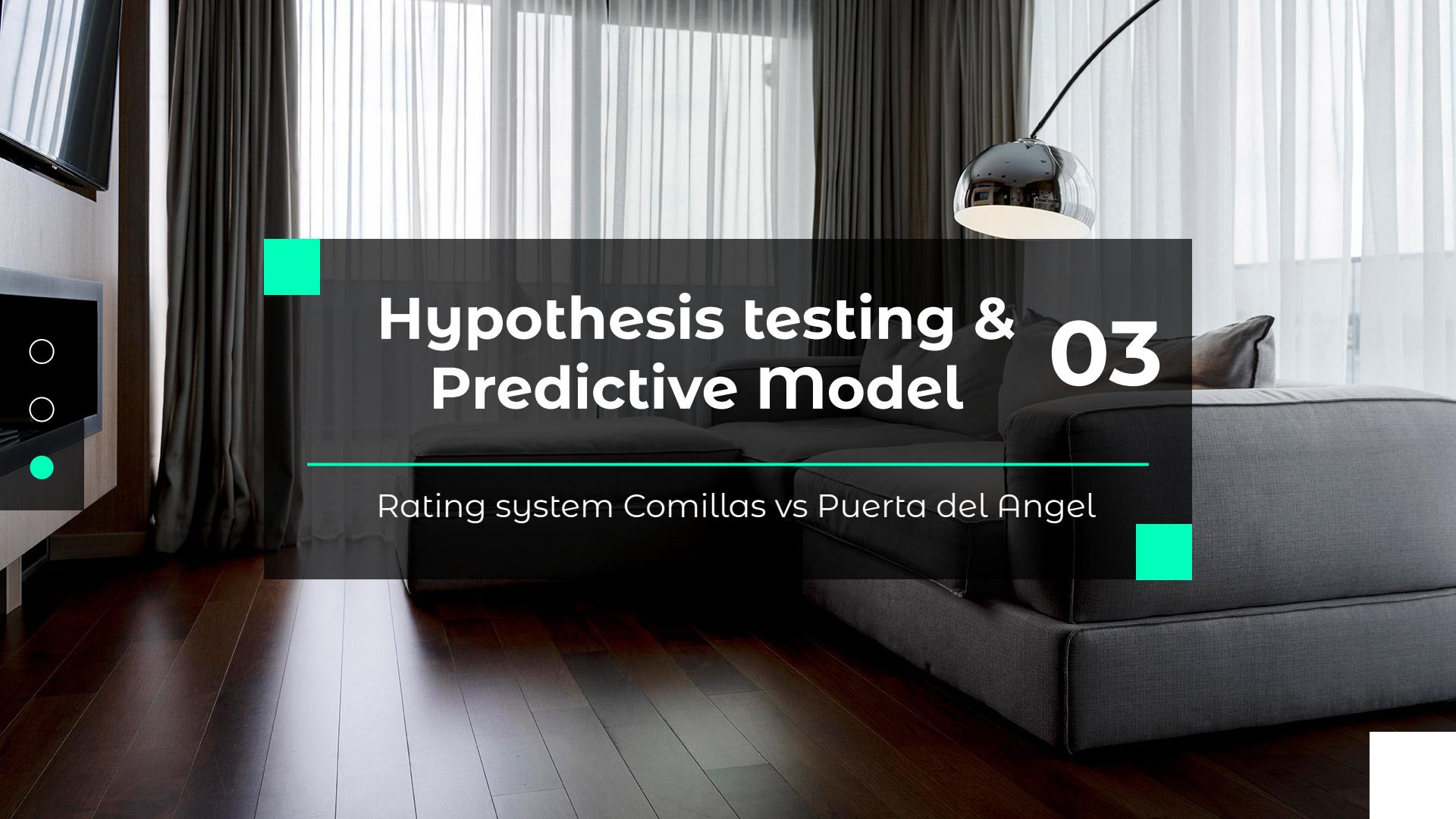
How to choose between them?



02 Our data

Let's visualize the two locations





Hypothesis testing & Predictive Model

03

Rating system Comillas vs Puerta del Angel

Hypothesis 1

Which neighborhood is cheaper?

Apmt: at least 2 rooms and terrace

Ho: The avg price in Neigh Comillas \leq The avg price in Neigh P Angel

H1: The avg price in Neigh Comillas $>$ The avg price in Neigh P Angel

Alpha = 0.05

With the available data
we don't have enough
evidence to reject the
Null hypothesis

P value

0.1320

Price

**Puerta del
Angel**

1

Comillas

1

Hypothesis 2

In terms of space (m^2), is any of them more spacious ?

Apmt: at least 2 rooms and terrace

H_0 : The avg m^2 in Neigh Comillas \leq The avg m^2 in Neigh P Angel

H_1 : The avg m^2 in Neigh Comillas $>$ The avg m^2 in Neigh P Angel

P value

0.0441

We reject the Null hypothesis

	Puerta del Angel	Comillas
Price	1	1
Space	0	1

Hypothesis 3

Which one has the best price/quality?

Apmt: overall quality = good / at least 2 rooms and terrace

Ho: The avg price in Neigh Comillas \leq The avg price in Neigh P Angel

H1: The avg price in Neigh Comillas $>$ The avg price in Neigh P Angel

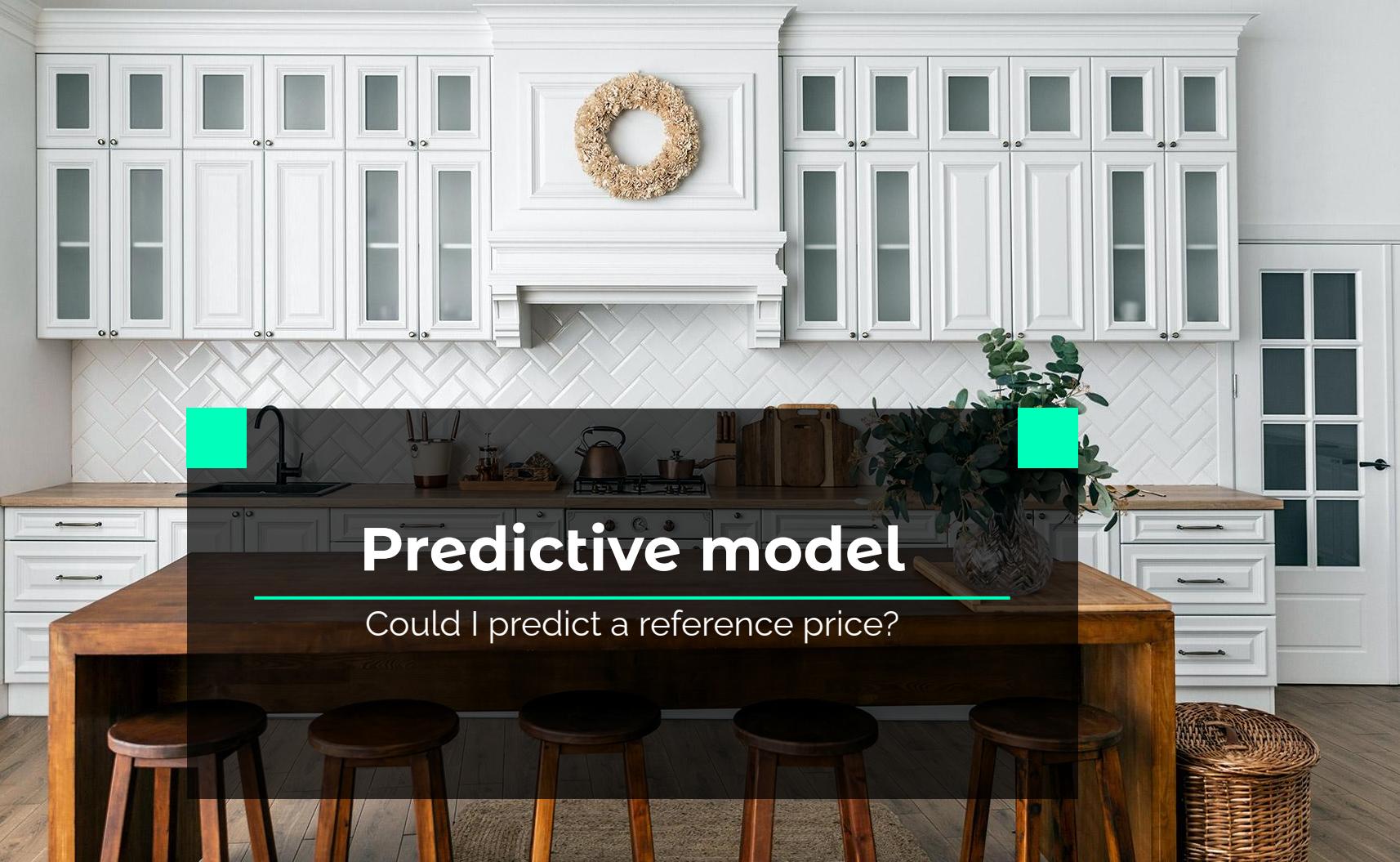
P value

0.0042

We reject the Null hypothesis

*Best quality with the best price(lower)

	Puerta del Angel	Comillas
Price	1	1
Space	0	1
Price/Quality	1	0



Predictive model

Could I predict a reference price?

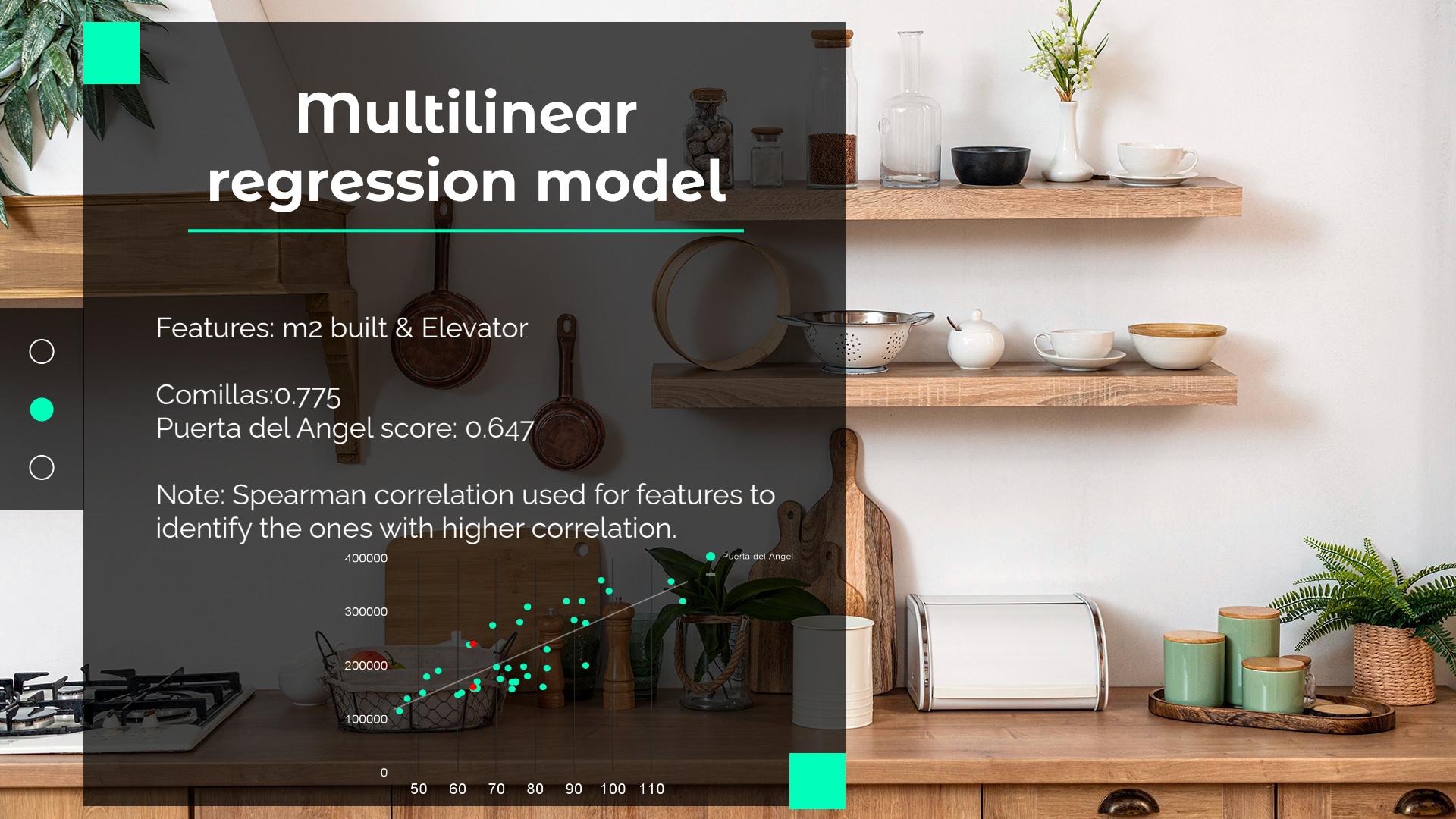
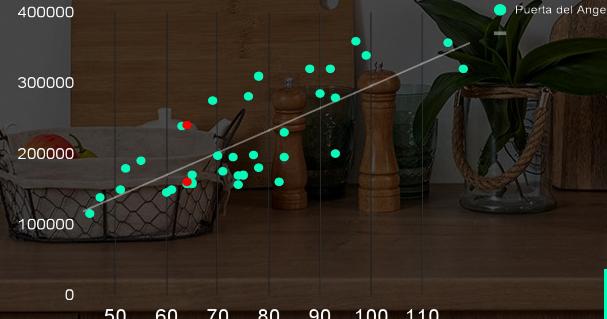
Multilinear regression model

Features: m2 built & Elevator

Comillas: 0.775

Puerta del Angel score: 0.647

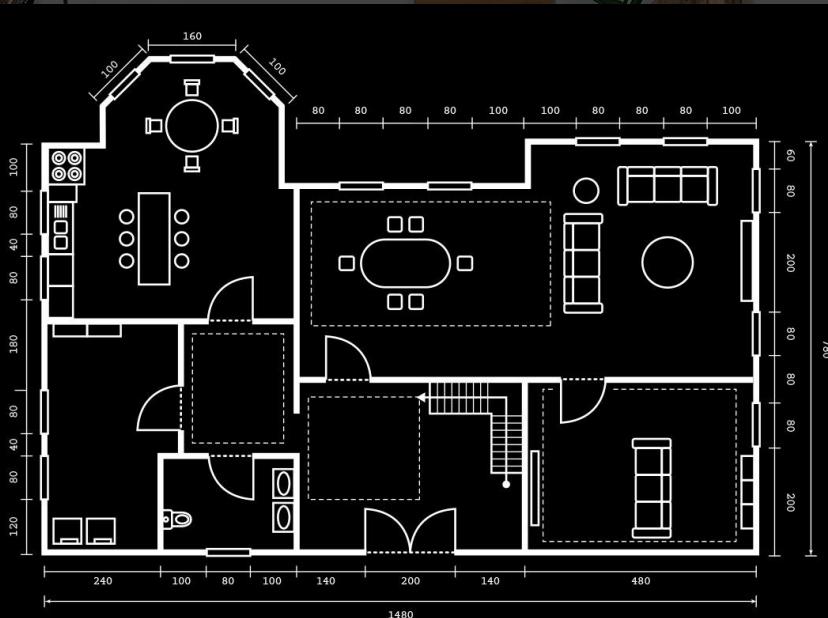
Note: Spearman correlation used for features to identify the ones with higher correlation.



Conclusions

- In this case we had a tie using statical insights.
- This methodology could be used for more & different neighborhoods.
- We could do different approaches, getting different kind of samples > with other requirements or non, so we could compare the whole location vs location.
- Predictive model score performed poorly <80, but we still got a range price.

Q&A



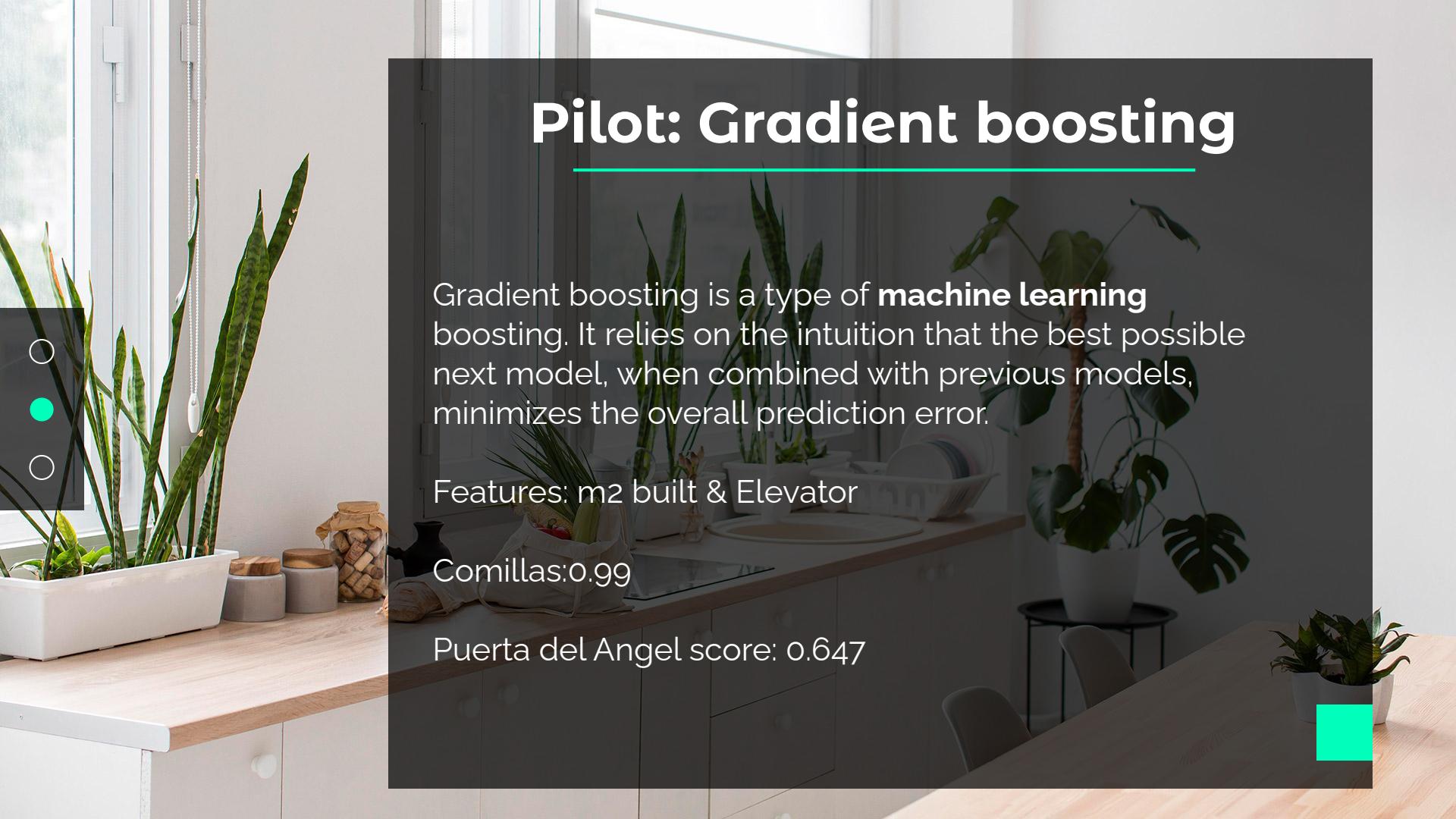
Pilot: Gradient boosting

Gradient boosting is a type of **machine learning** boosting. It relies on the intuition that the best possible next model, when combined with previous models, minimizes the overall prediction error.

Features: m2 built & Elevator

Comillas:0.99

Puerta del Angel score: 0.647



Construction progress



2018

Jupiter is the
biggest planet



2019

Mercury is the
smallest planet



2020

Despite being
red, Mars is cold



2021

Neptune is very
far away from us

Increase in home sales

■ Jupiter

Jupiter is the biggest planet of them all

■ Venus

Venus is the second planet from the Sun

Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)

Sales process

\$50,000

Saturn is the
ringed planet

\$70,000

Jupiter is the
biggest planet

\$80,000

Neptune is far
away from us



Results

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal

Water strg: 500/l

Floors: 2

Air conditioners: 2

Bathrooms: 3

Staircases: 4

The kitchen overview

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal



2008

Year of build



5

Bedrooms



2

Bathrooms



3450

Square feet



1

Kitchen



Kitchen



Mercury

Mercury is the closest planet to the Sun



Jupiter

Jupiter is the biggest planet of them all

-
-
-



Kitchen: features



Mercury

It's the closest planet to the Sun



Venus

Venus is the second planet from the Sun

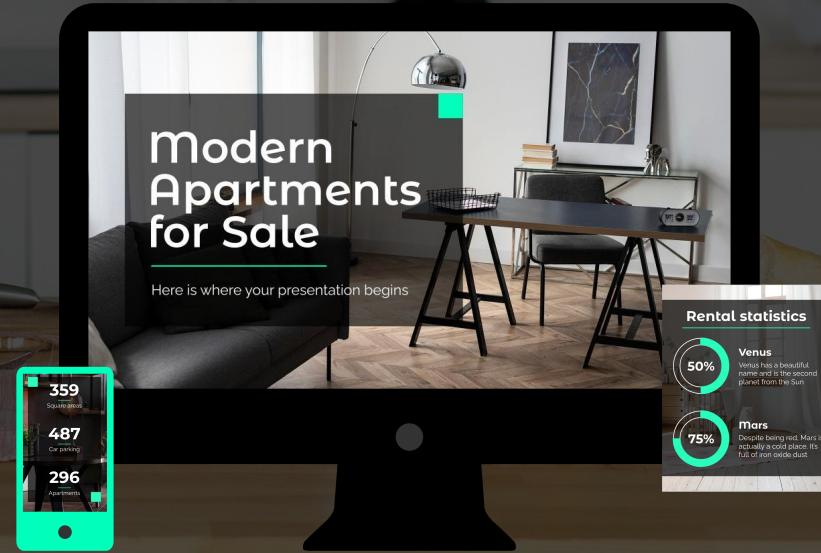


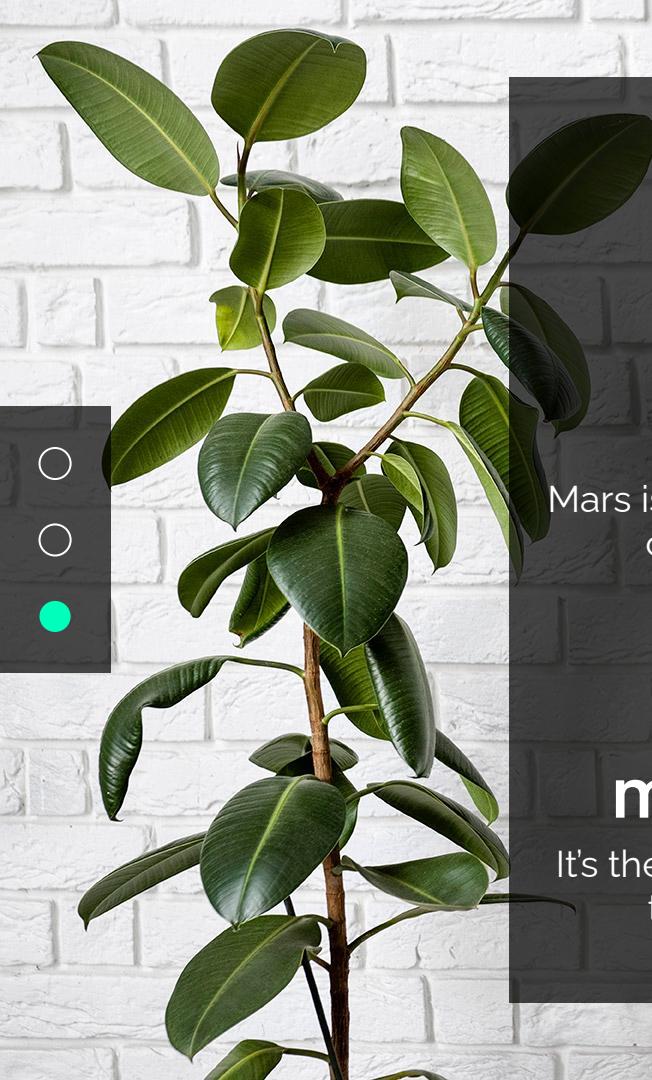
Mars

Despite being red, Mars is actually a cold place

Mockup

You can replace the images on these screen with your own. Just right-click on them and select "Replace image"





Building amenities



Mars

Mars is actually a very cold place



Venus

It's the second planet from the Sun



Neptune

Neptune is very far away from us



Mercury

It's the closest planet to the Sun



Saturn

Saturn is a gas giant and has rings



Jupiter

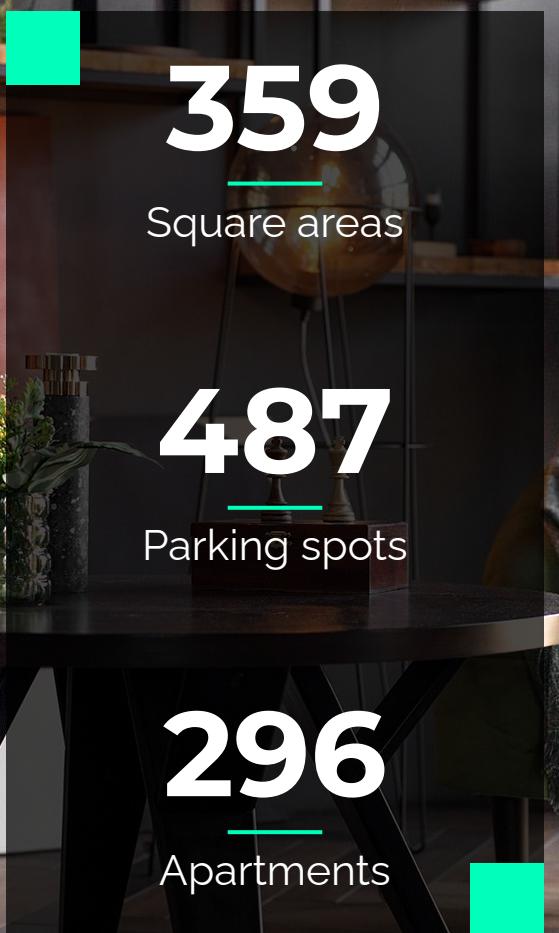
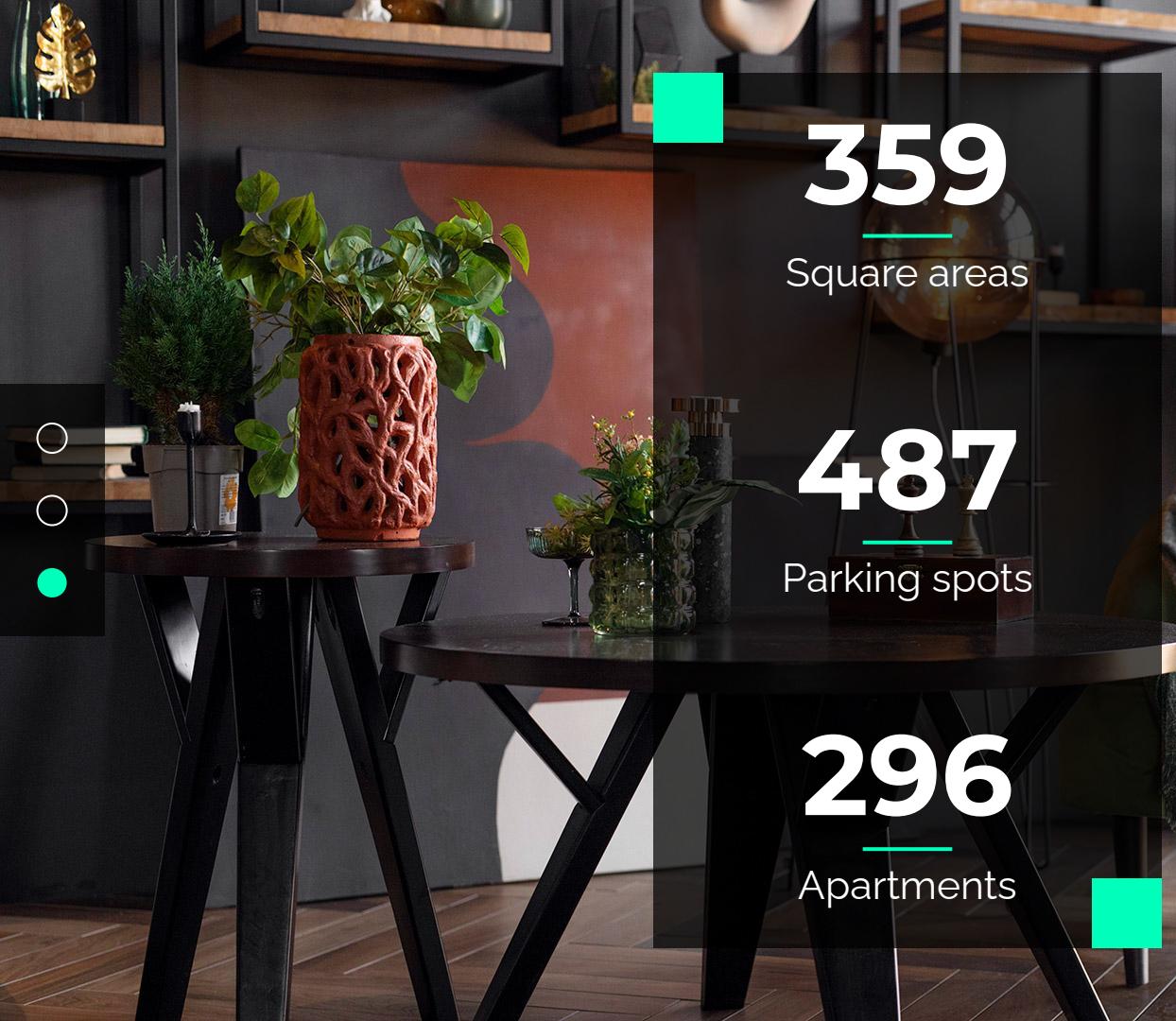
Jupiter is the biggest planet of them all





\$350,000

Price of the house



Contact me!



John Hill

Mercury is the closest planet to the Sun and the smallest one in the Solar System



Phone:

+88 123 45 67 89



Email:

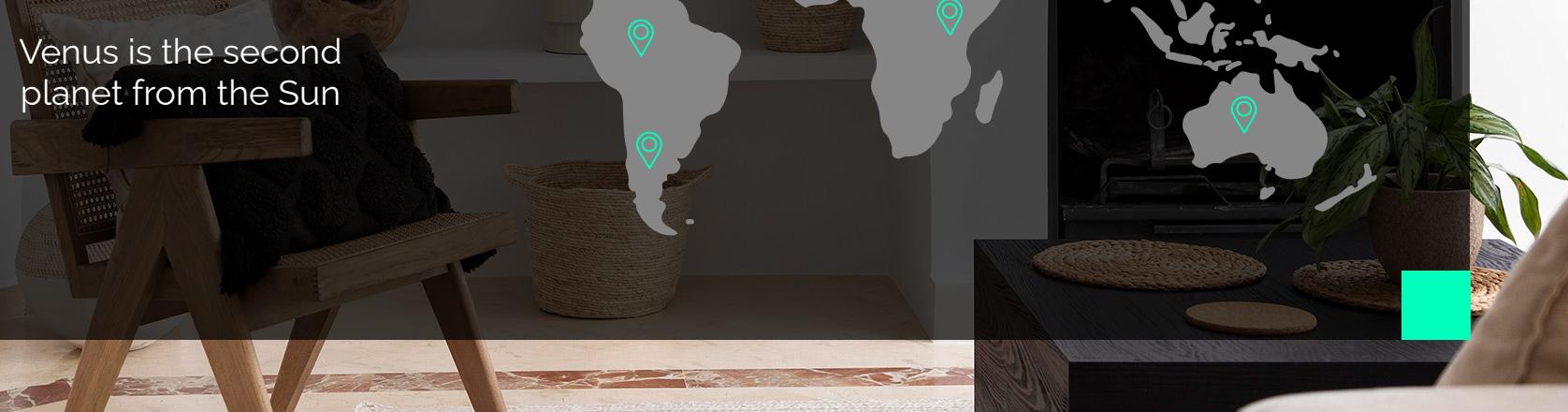
email@freepik.com

Our properties



Venus

Venus is the second planet from the Sun



Room dimensions

Room

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal

View

Jupiter is the biggest planet



Safety

Neptune is far away from us



Amenities

Mars is a very cold planet





Properties: details

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal

Water strg: 500/l

Floors: 2

Air conditioners: 2

Bathrooms: 3

Staircases: 4

Principal penthouse

Room

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal



Floors

1

Rooms

3

Bathrooms

1

Windows

2

Testimonials

"Mercury is the closest planet to the Sun and the smallest of them all"



Mark Pine

You can talk a bit about this person here

"Despite being red, Mars is a cold place full of iron oxide dust"



Eliza Smith

You can talk a bit about this person here



Skyview

Venus has a beautiful name and is the second planet from the Sun. It's hot and has a poisonous atmosphere

About real estate

Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal



Trusted partners

Over 30 years



Quality support

24/7

Calendar for visitors

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

01 **Jupiter**

Jupiter is a big planet

17 **Neptune**

It's far away from us

Urban style

Mercury is the closest planet to the Sun
and the smallest one in the Solar System



Jupiter

Jupiter is the
biggest planet

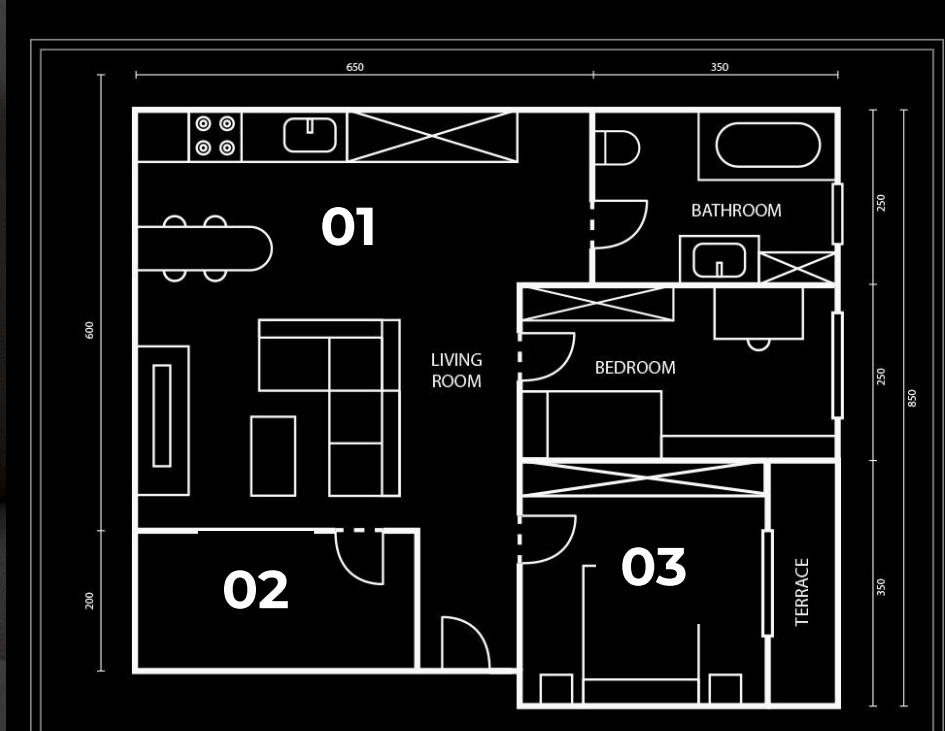


Neptune

Neptune is far
away from us



Living room: blueprints



01 Jupiter

Jupiter is a big planet

02 Neptune

It's far away from us

03 Mars

Mars is a cold planet

Thanks!

Do you have any questions?

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Real estate icon pack





Real estate icon pack





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- Minimalistic marble sink in the bathroom
- Minimalistic white bathtub with a towel on it
- Bathtub ready for a bubble bath
- Minimalist office with table and laptop
- Home interior design assortment
- Professional ballet studio with handrail
- Kitchen interior design with wooden furniture
- Home interior design chair
- Home interior design chair





Resources

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- Beautiful interior room design concept
- Living room design with fireplace
- Beautiful interior room design concept
- Interior design bathroom with bathtub and shower
- Room interior design I
- Room interior design II
- Room interior design III
- Room interior design IV
- Room interior design V

- Room interior design VI
 - Room interior design VII
 - Room interior design VIII
 - Room interior design IX
 - Room interior design X
 - Room interior design XI
 - Room interior design XII
 - Room interior design XIII
 - Home interior design arrangement
 - Couch with pillows interior design
 - Cheerful real estate agent showing toy house
 - Close up on elegant decoration of house
- 



Resources

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- Front view of child room with rustic design
 - Close up on elegant decoration of house
 - Kitchen interior design with wooden table
 - Home interior design assortment I
 - Home interior design arrangement II
 - Home indoor design concept
 - Interior room design with copy space
 - Stylish minimalistic kitchen with plants
 - Big country house in winter
 - Home interior design assortment
 - Bathroom interior design with shower
 - Home interior design assortment
 - Front view of kitchen counter
 - Romantic dinner with glasses of wine
 - Front view of man looking clueless
 - Front view of elegant businesswoman holding clipboard with copy space
 - Creative feng shui practice living room arrangement
 - Minimalistic living room design
- 



Resources

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- Blueprint of a house top view
- Architectural blueprint of a house
- Blueprint architectural plan for a house
- Blueprint of a house top view

Icons:

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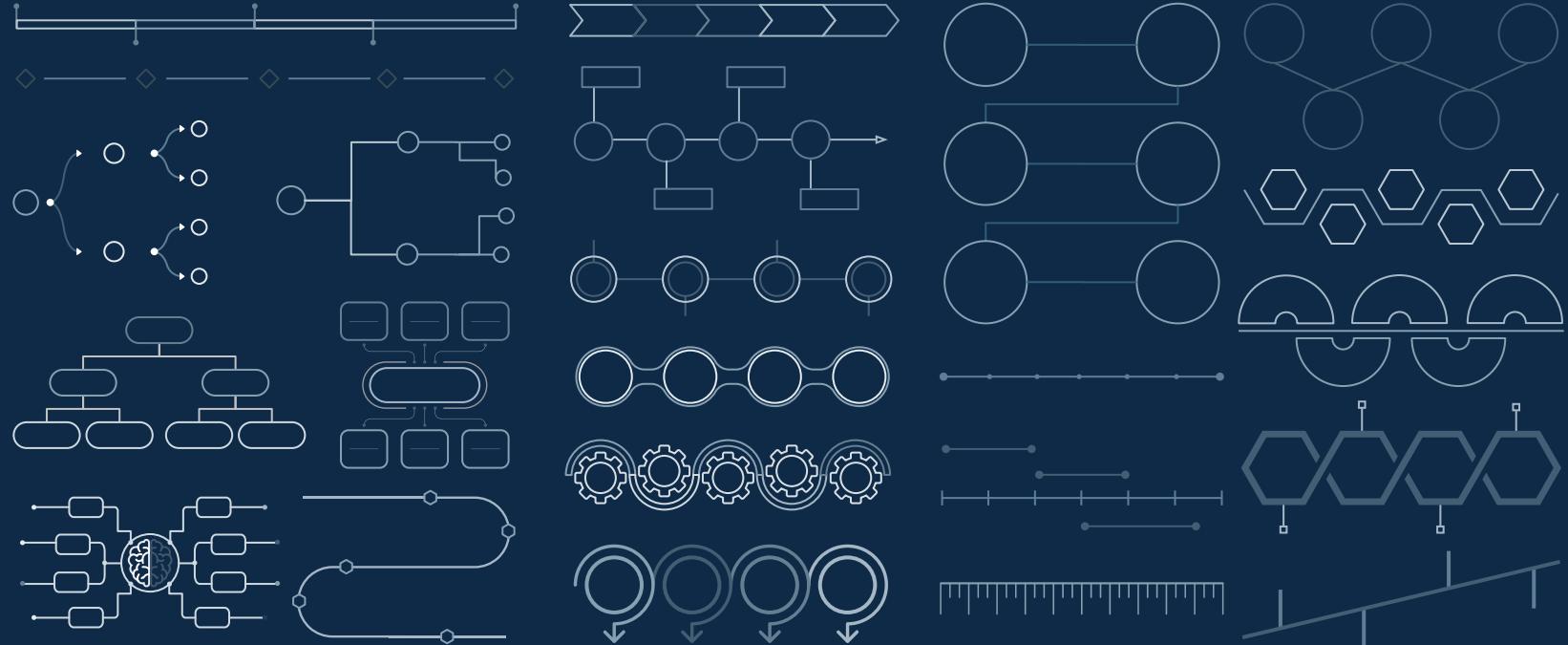
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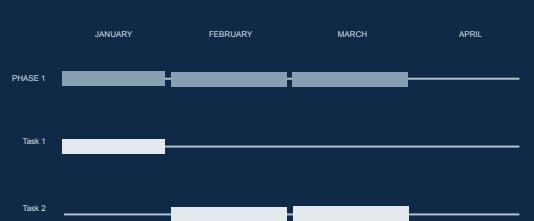
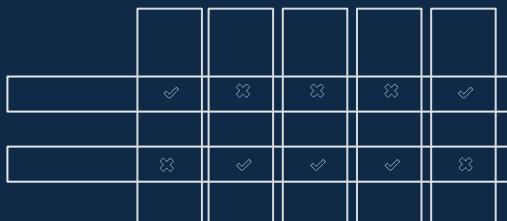
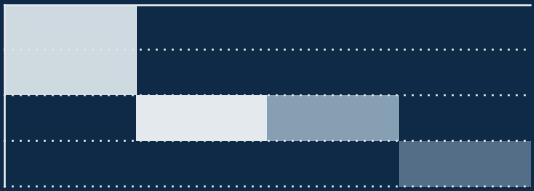
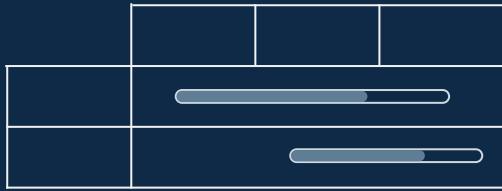
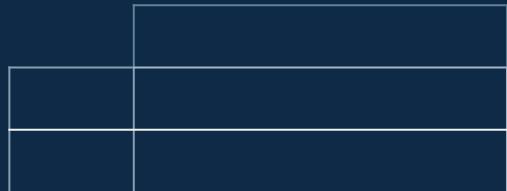
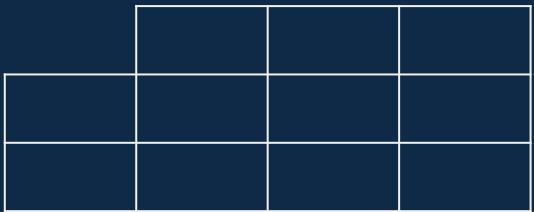
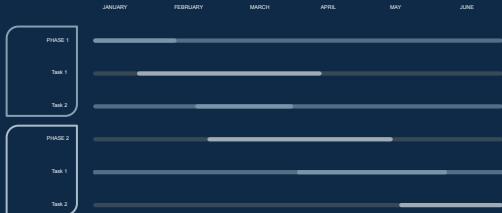
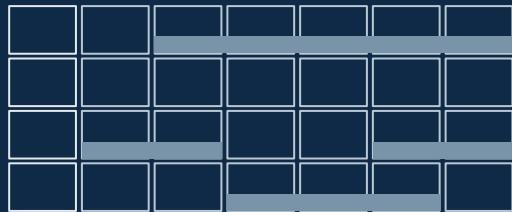
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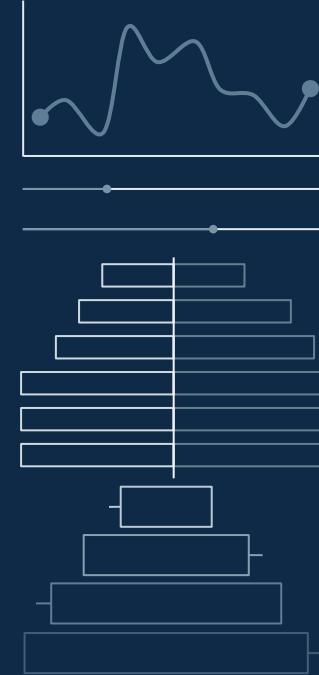
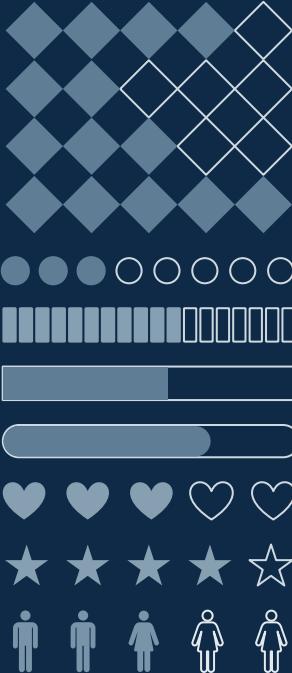
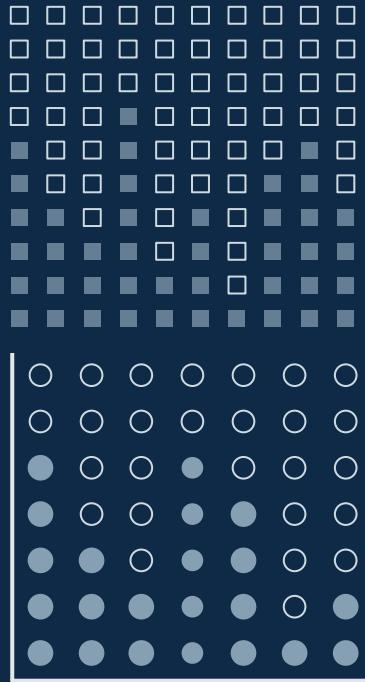












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