



# House Sales in King County, Seattle, USA

Predicting house prices,  
using sales data from May  
2014 to May 2015

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- ✖ A quick look at the dataset

**02**

## **Bens's Old House**

- Selling a house in King County

**03**

## **Karl's New House**

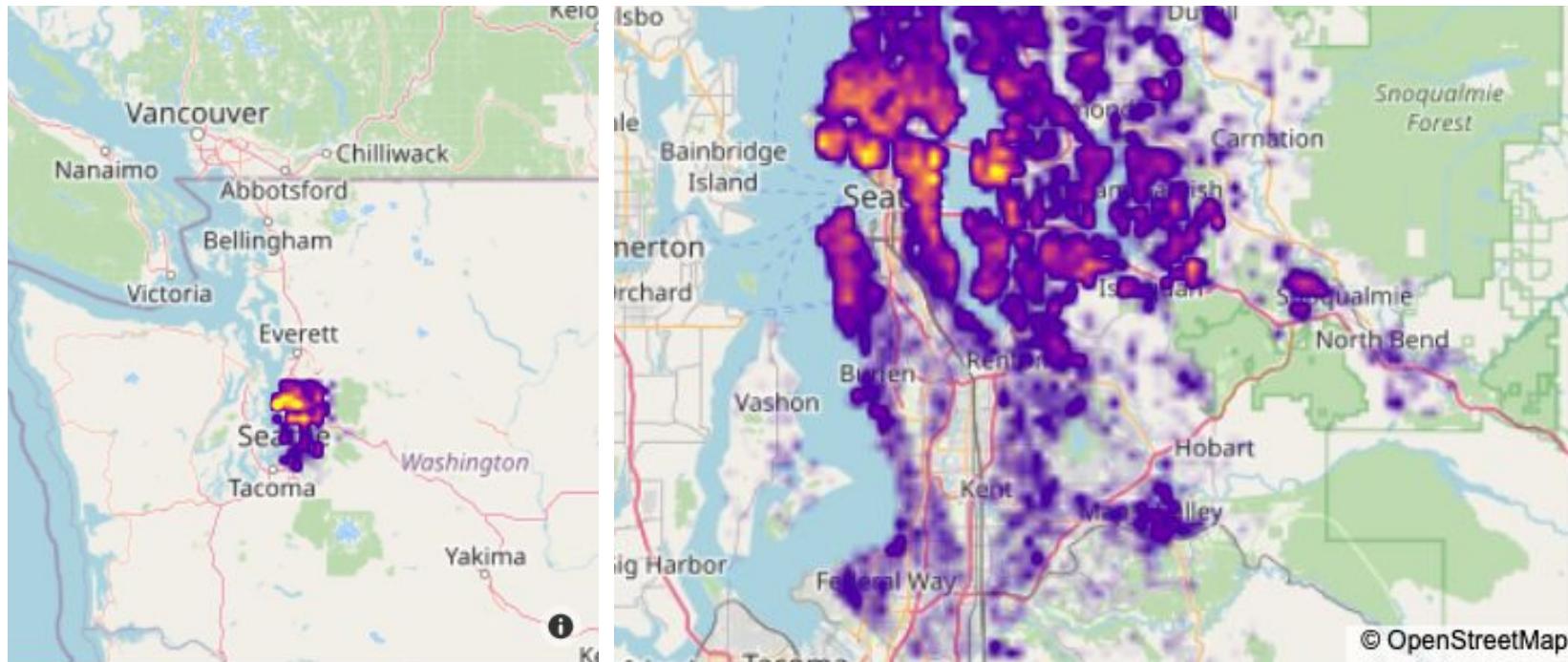
- ✖ Waterfront, cheap, and available.

**04**

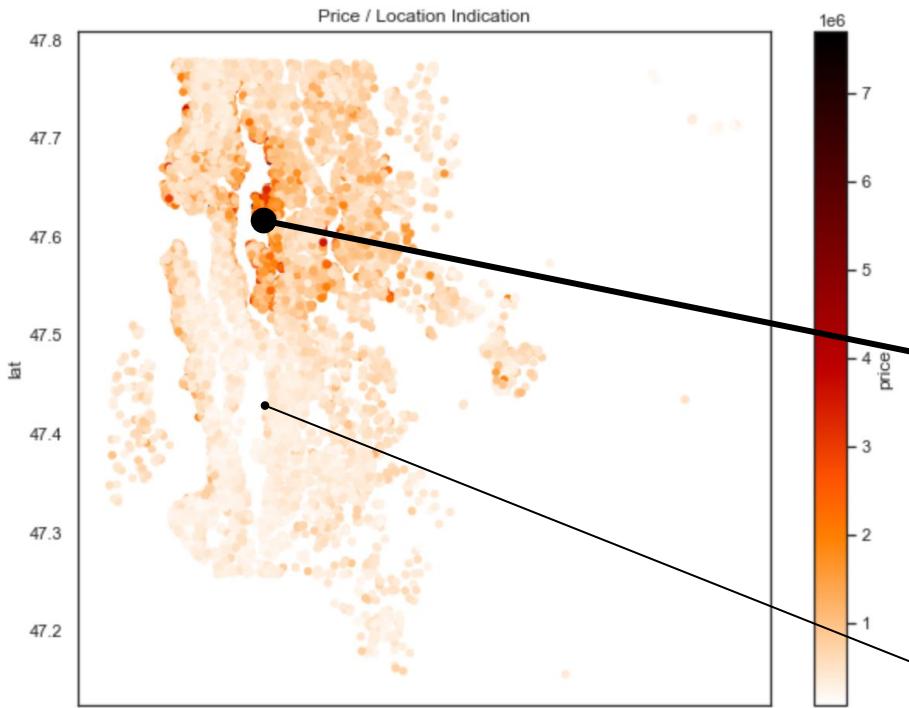
## **Model Validation**

- Test-train-split-validation and the RMSE

# King County, USA



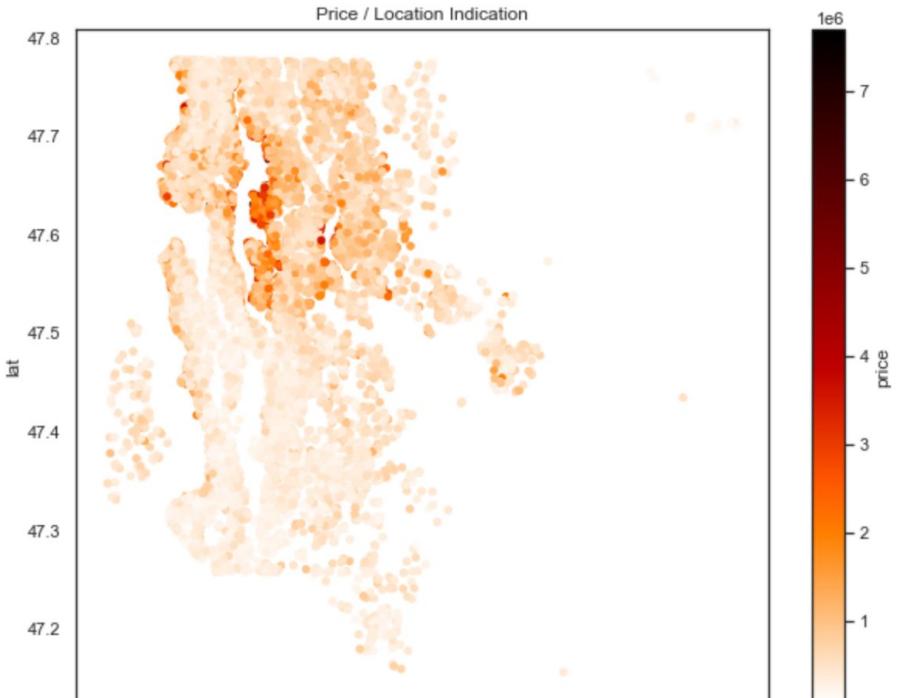
# King County, USA



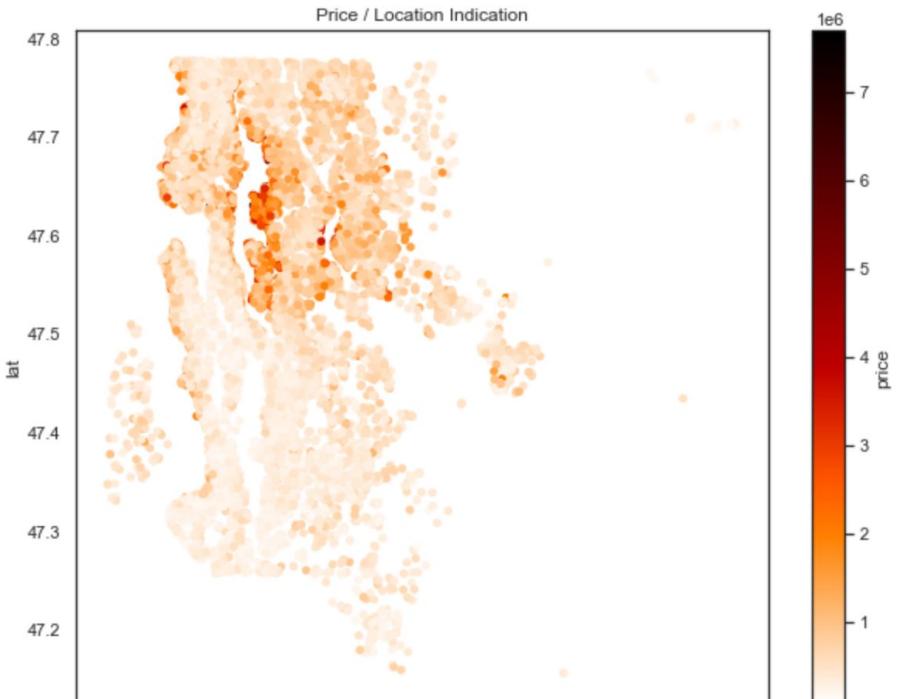
Is this the  
middle of  
Seattle?

Cheap  
waterfront?  
Sadly not.

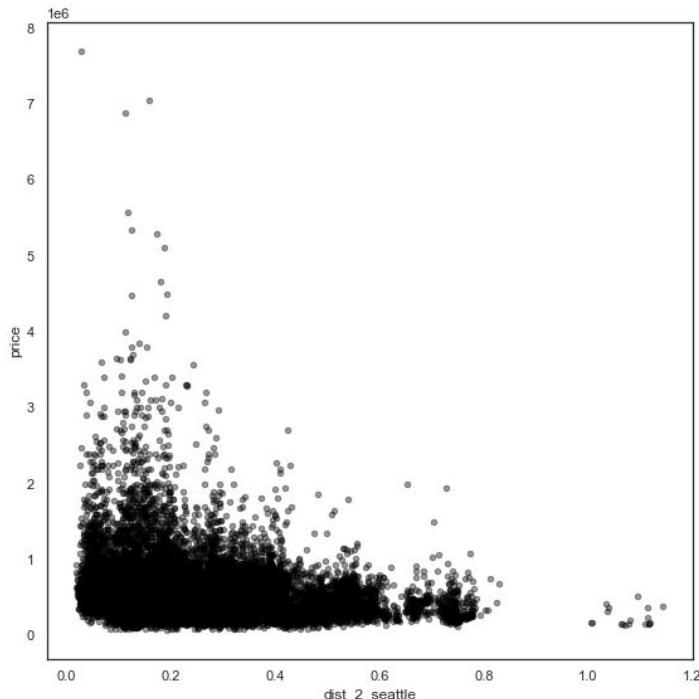
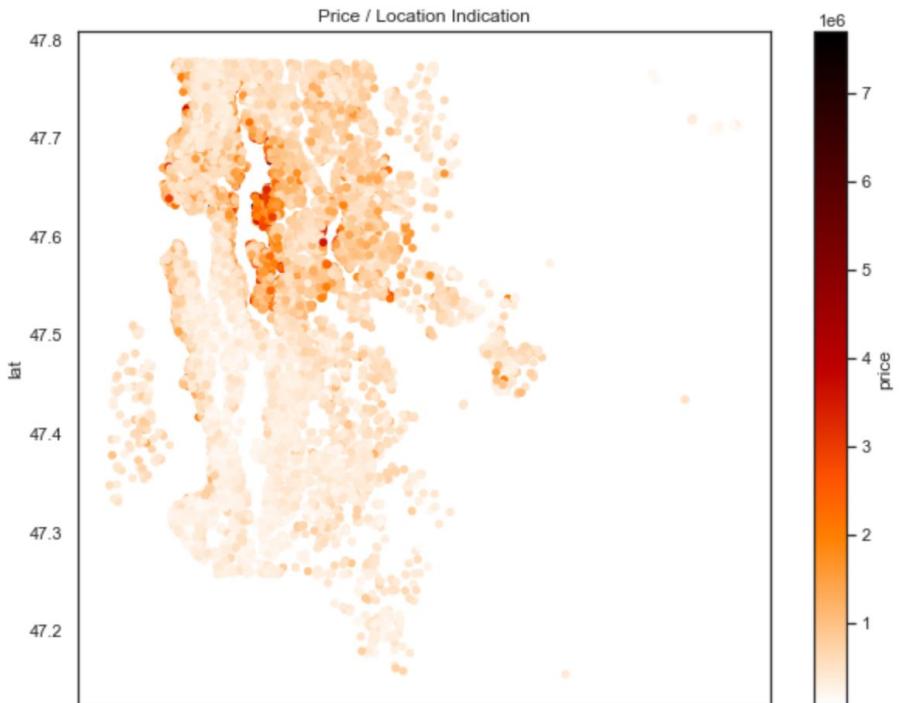
# King County, USA



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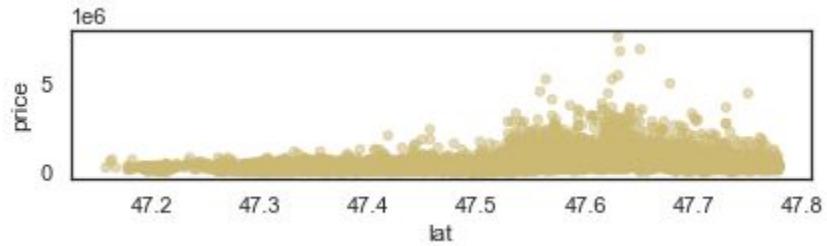
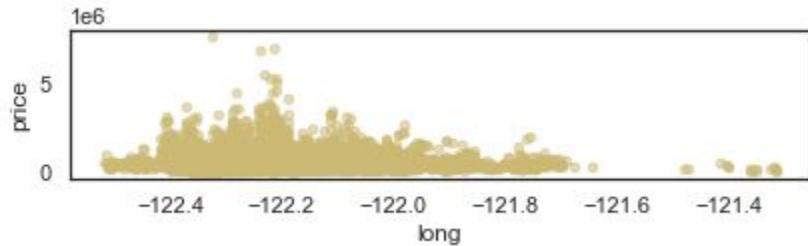
# King County, USA



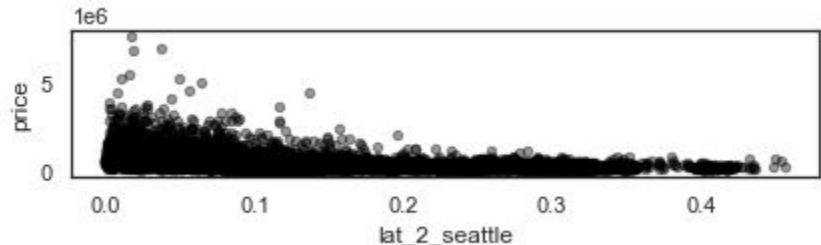
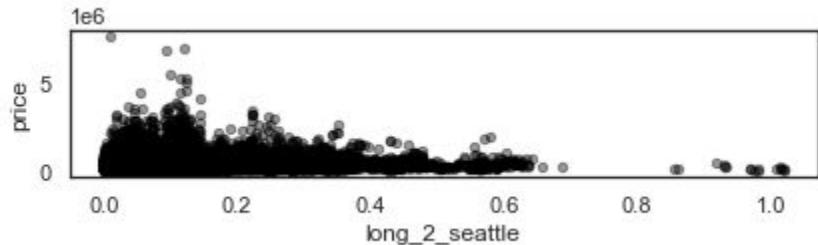
# King County, USA



## Absolut Geolocation on price



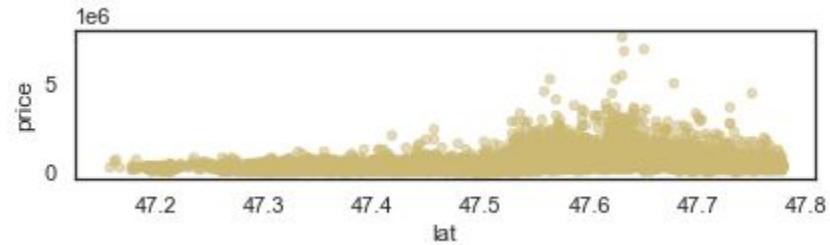
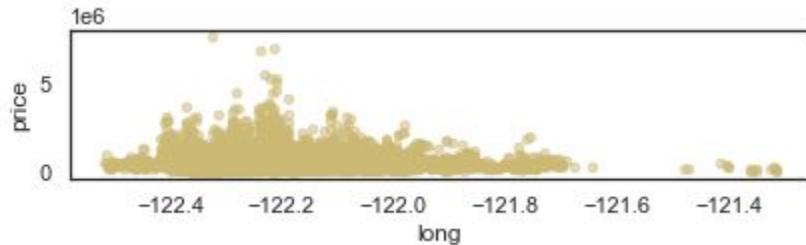
## Geolocation relative to Seattle City Center on price



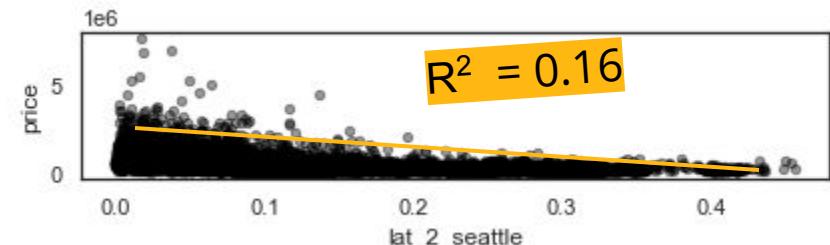
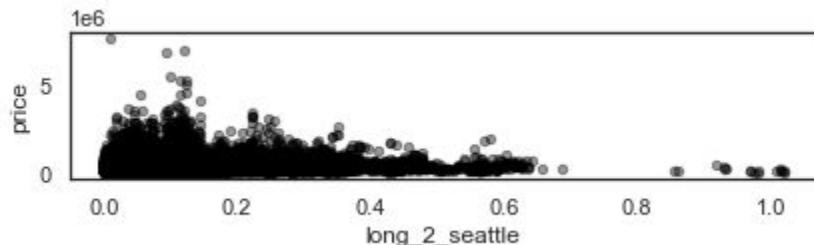
# King County, USA



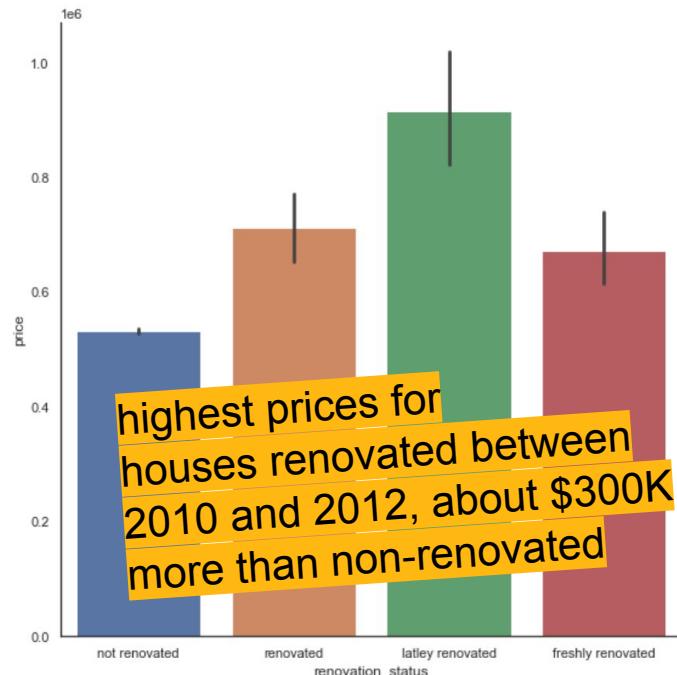
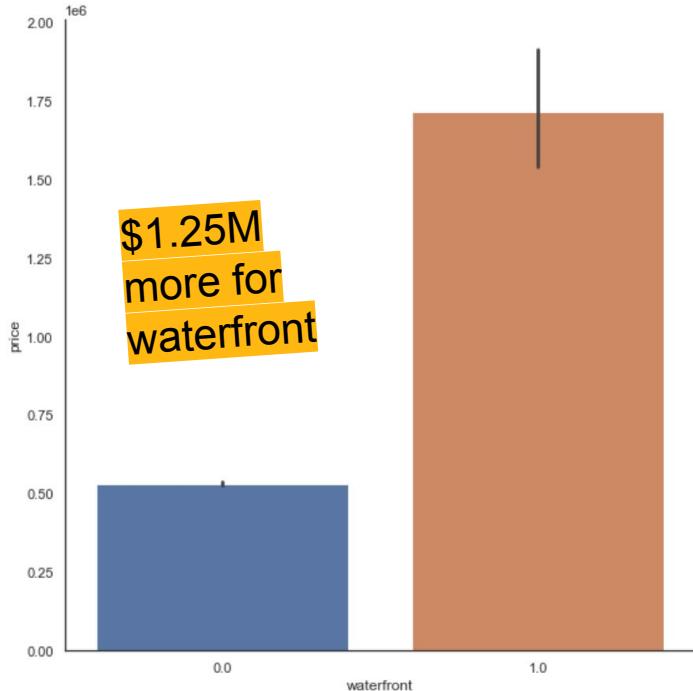
## Absolut Geolocation on price



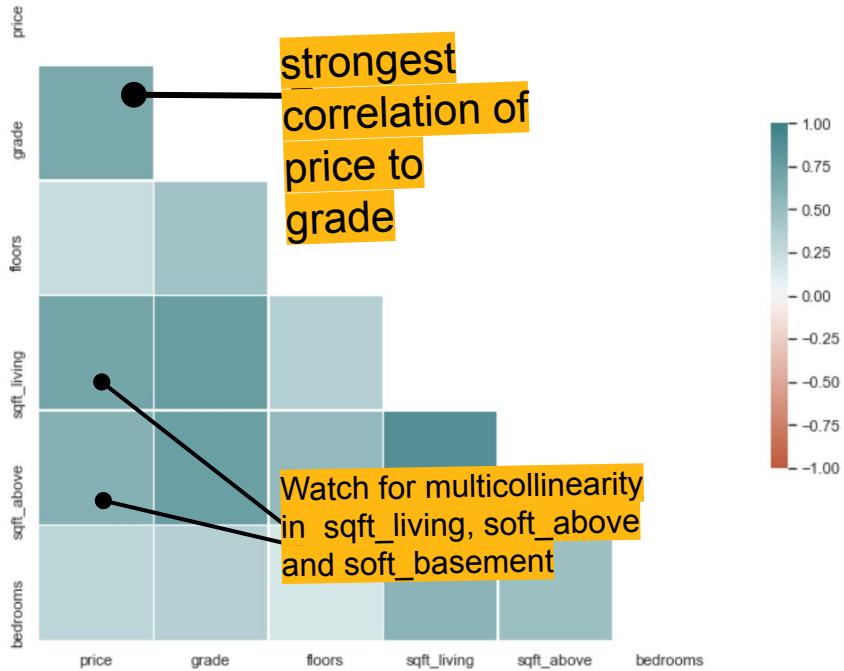
## Geolocation relative to Seattle City Center on price



# King County, USA



# King County, USA



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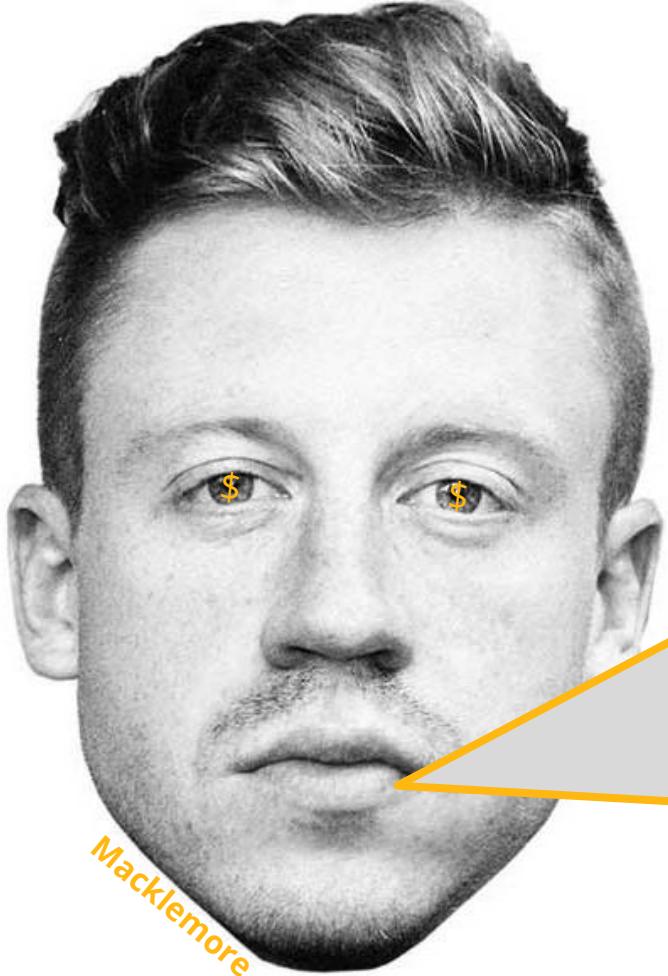
## Karl's New House

Waterfront, cheap, and available.

04

## Model Validation

Test-train-split-validation and the RMSE

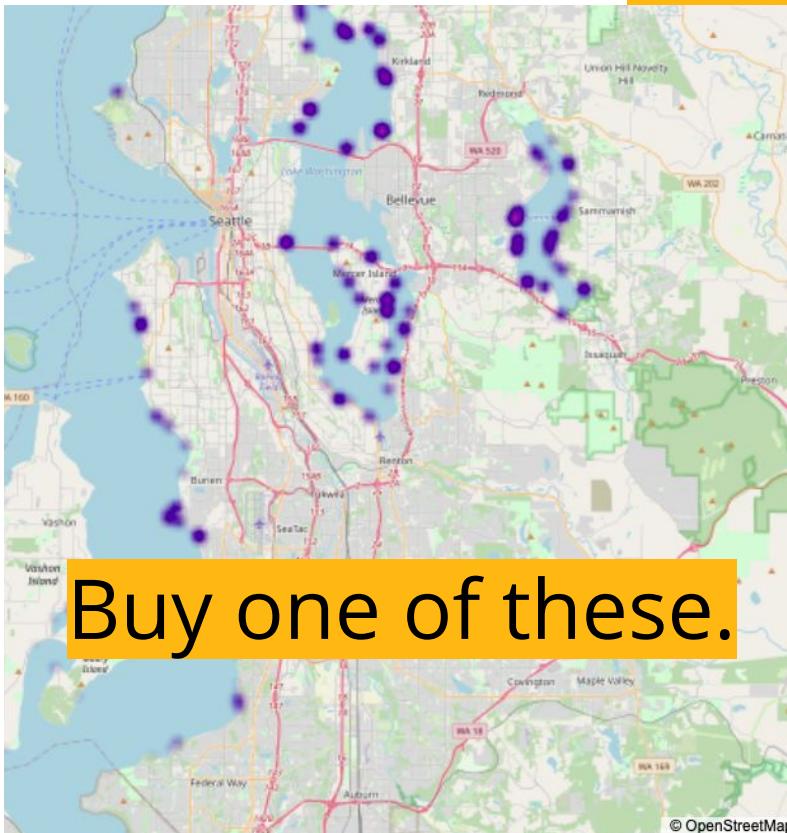
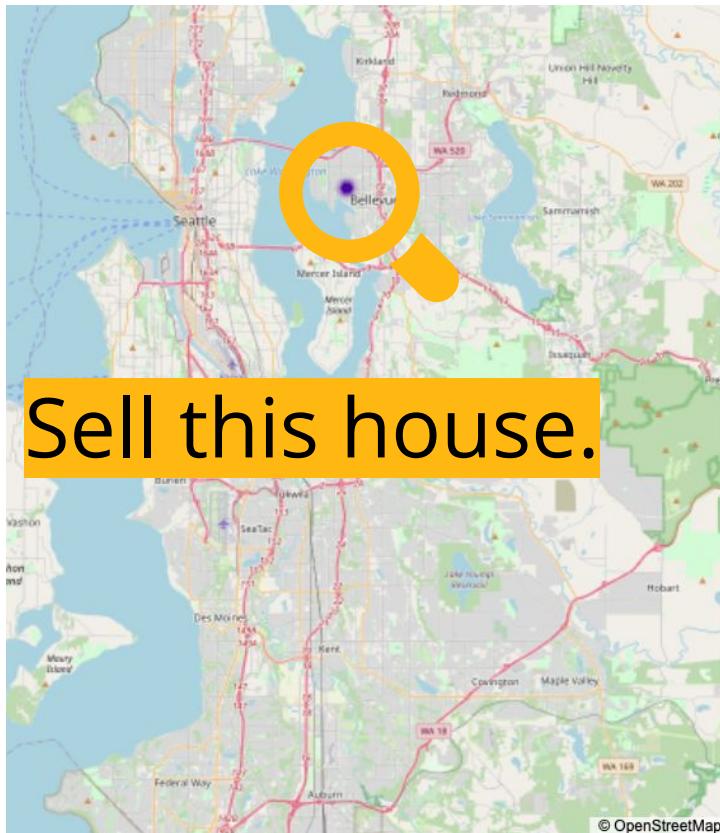


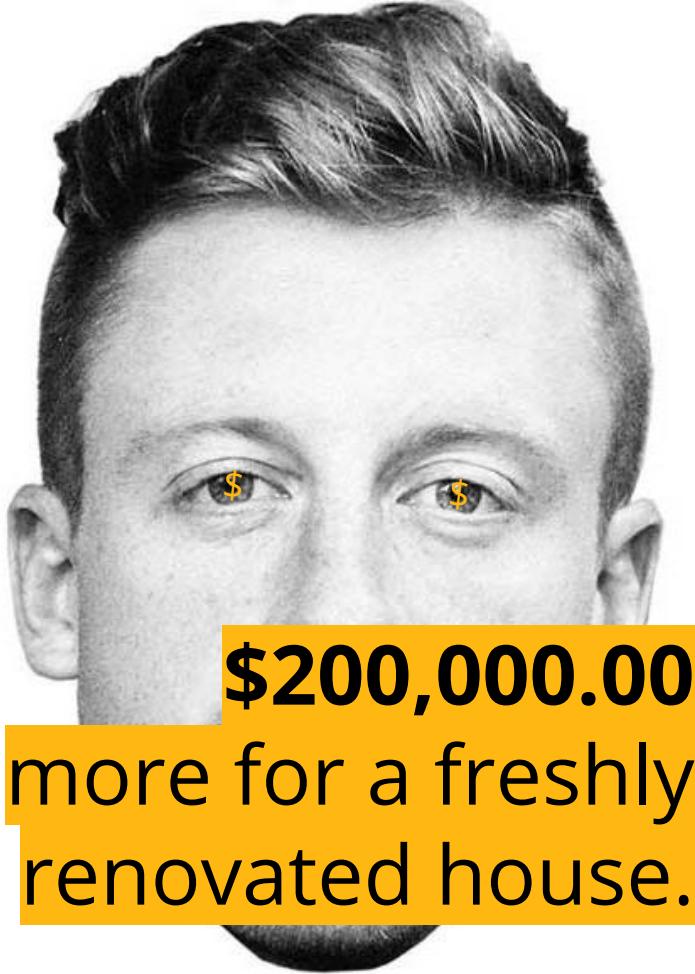
Old friend, I need a new place. This whole home office thing makes me crazy. I live in Seattle, but I don't see the water. I live at 98004 right now, you know the place. It's run-down at the moment.

Make it cheap, but I want to move in ASAP.

Get back to me soon. B.

Old friend, I need a new place. This whole  
{BS\_indicator=True} {\$\$\$\$}  
home office thing makes me crazy. I live in Seattle, but I  
{hyper sensitive customer}  
don't see the water. I live at 98004 right now,  
{need: view = 1} {selling price?!}  
you know the place. It's run-down at the moment.  
{df[Bill's place']} {optional: renovation}  
Make it cheap, but I want to move in ASAP.  
{\$\$\$: no} {need: high turnover rate}  
Get back to me soon. B.  
{deadline: 40h}





**\$200,000.00**  
more for a freshly  
renovated house.

Macklemore

## Ben's Place:



<b>Bedrooms</b>	3
<b>bathrooms</b>	3
<b>sqft_living</b>	4560
<b>sqft_above</b>	2760
<b>sqft_lot15</b>	13362
<b>waterfront</b>	0
<b>grade</b>	11

**Renovation\_status:** not renovated

→ USD 2,909,336.00

**Renovation\_status:** renovated

→ USD 3,129,036.00

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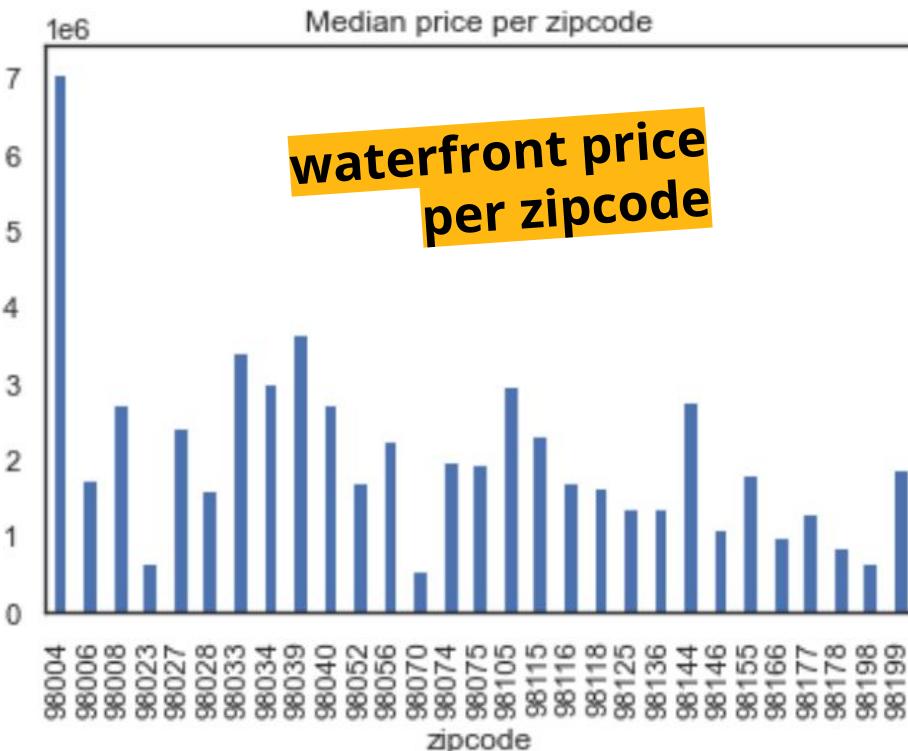
Test-train-split-validation and the RMSE



**146 houses** ✕

At waterfront have been sold last year.  
That's less than 1% of all sales in the region.

# Where to buy Waterfront ✨



**\$ 1,500,000.00**

costs the median house with waterfront. Prices range mostly between \$850K and \$2,300K.

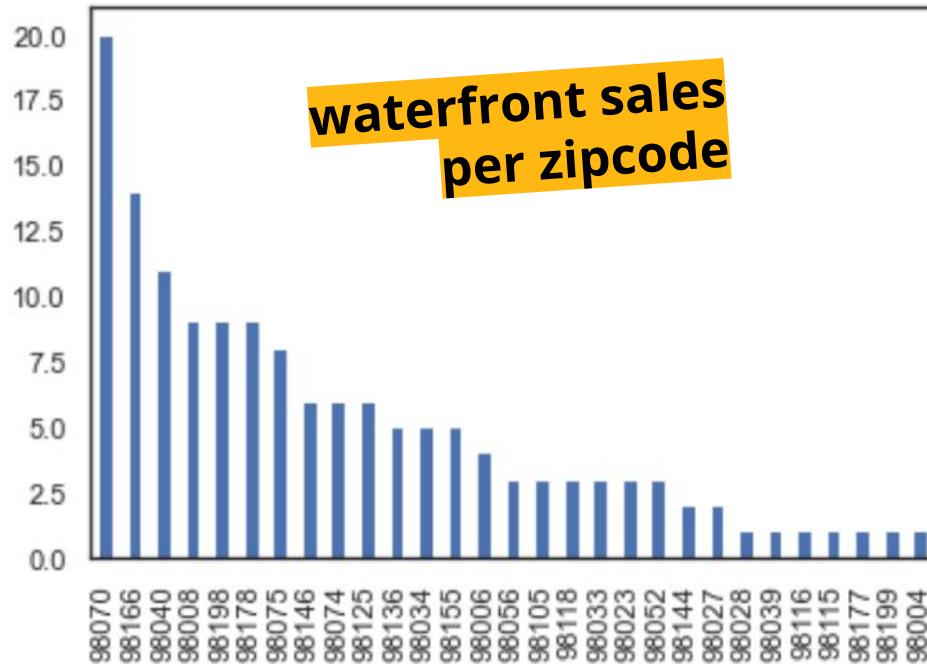
**98070, 98166, 98040**

30% of all houses with waterfront are sold in these zipcode areas. With an median price of only \$1,500K.

**98070, 96023**

zipcode areas with rather cheap waterfront houses.

# Where to buy Waterfront ✨



**\$ 1,500,000.00**

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30% of all houses with waterfront are sold in these zipcode areas. With a median price of only \$1,500K.

**98070, 96023**

zipcode areas with rather cheap waterfront houses.

Ben! Good to hear from you. Renovate your place for no more than \$200K. Not worth it. Look for a new place with waterfront in 98070, 98166, and 98040. Will cost you about \$1,500K. Or cheaper in 98200, 98075.

Btw, this analysis is  $48\text{h} * \$95 \text{ USD/h} \approx \$5\text{K}$  - whenever it suits you. Good talking to you. Hope your family is doing fine.



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**x\_train: 17277**

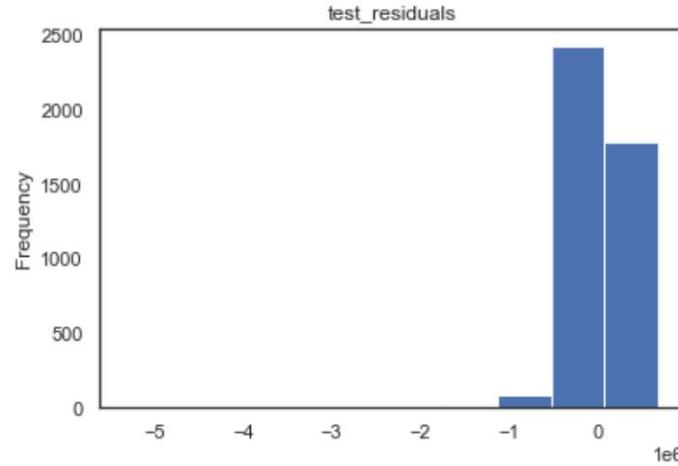
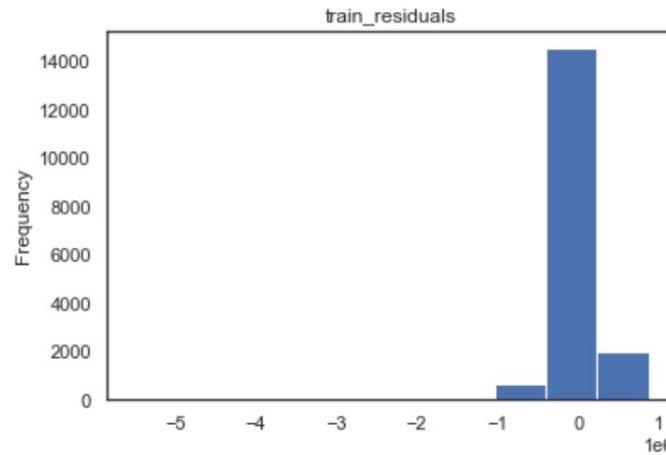
**x\_test: 4320 ✘**

```
sklearn.model_selection.train_test_split(test_size=0.2, random_state=42)
```

**Train RMSE: 239,942**

**Test RMSE: 236,065** ✘

RMSE is an absolute measure of fit, we hence talk \$\$\$.



**Train RMSE: 239,942** ✘  
**Test RMSE: 236,065**

RMSE is an absolute measure of fit, we hence talk \$\$\$.

Dep. Variable:	price	R-squared:	0.699
Model:	OLS	Adj. R-squared:	0.699
Method:	Least Squares	F-statistic:	3134.
Date:	Thu, 17 Sep 2020	Prob (F-statistic):	0.00
Time:	09:55:15	Log-Likelihood:	-2.9442e+05
No. Observations:	21597	AIC:	5.889e+05
Df Residuals:	21580	BIC:	5.890e+05
Df Model:	16		
Covariance Type:	nonrobust		
Omnibus:	18683.039	Durbin-Watson:	1.982
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2003719.883
Skew:	3.651	Prob(JB):	0.00
Kurtosis:	49.619	Cond. No.	3.03e+05

Give me the  
stats



	coef	std err	t	P> t	[0.025	0.975]
Intercept	4.359e+06	1.15e+05	37.808	0.000	4.13e+06	4.59e+06
has_basement[T.1]	-1.091e+04	3215.445	-3.394	0.001	-1.72e+04	-4612.008
waterfront[T.1.0]	5.437e+05	2.04e+04	26.601	0.000	5.04e+05	5.84e+05
view[T.1.0]	9.548e+04	1.13e+04	8.436	0.000	7.33e+04	1.18e+05
view[T.2.0]	5.384e+04	6856.354	7.852	0.000	4.04e+04	6.73e+04
view[T.3.0]	1.264e+05	9346.662	13.522	0.000	1.08e+05	1.45e+05
view[T.4.0]	2.954e+05	1.42e+04	20.857	0.000	2.68e+05	3.23e+05
renovation_status[T.latley renovated]	9.92e+04	2.28e+04	4.346	0.000	5.45e+04	1.44e+05
renovation_status[T.not renovated]	-2.471e+04	1.87e+04	-1.320	0.187	-6.14e+04	1.2e+04
renovation_status[T.renovated]	-3.044e+04	2.12e+04	-1.435	0.151	-7.2e+04	1.11e+04
bedrooms	-2.721e+04	1854.485	-14.670	0.000	-3.08e+04	-2.36e+04
lat_2_seattle	-1.048e+06	1.8e+04	-58.301	0.000	-1.08e+06	-1.01e+06
yr_builtin	-2432.4269	61.366	-39.638	0.000	-2552.708	-2312.146
floors	6371.2361	3290.127	1.936	0.053	-77.657	1.28e+04
sqft_living	186.9392	3.106	60.188	0.000	180.851	193.027
grade	1.018e+05	2121.741	47.987	0.000	9.77e+04	1.06e+05
sqft_living15	11.3588	3.332	3.409	0.001	4.828	17.889

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Use train-split-validation and the RMSE

# Thanks.





archiv



**\$200,000.00**

more for a  
freshly  
renovated  
house.

ID: 8964800890

## Karl's Place:



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<b>bathrooms</b>	3
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<b>c_sqft_lot15</b>	
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Money is not an issue, but I want to move in ASAP.

Get back to me soon. K.

# CONTENTS OF THIS TEMPLATE ✅

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2. An assortment of **pictures/illustrations** that are suitable for use in the presentation can be found in the **alternative resources** slide.
3. A **thanks slide**, which you must keep so that proper credits for our design are given.
4. A **resources slide**, where you'll find links to all the elements used in the template.
5. **Instructions** for use.
6. Final slides with:
  1. The **fonts and colors** used in the template.
  2. A selection of **illustrations**. You can also customize and animate them as you wish with the online editor. Visit **Stories by Freepik** to find more.
  3. More **infographic resources**, whose size and color can be edited.
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You can delete this slide when you're done editing the presentation.

# OUR COMPANY ✕

## MERCURY

Mercury is the closest planet to the Sun

## MARS

Despite being red, Mars is actually a cold place

## VENUS

Venus has a beautiful name but it's hot

## JUPITER

It's the biggest planet in the Solar System

## SATURN

Saturn is composed of hydrogen and helium

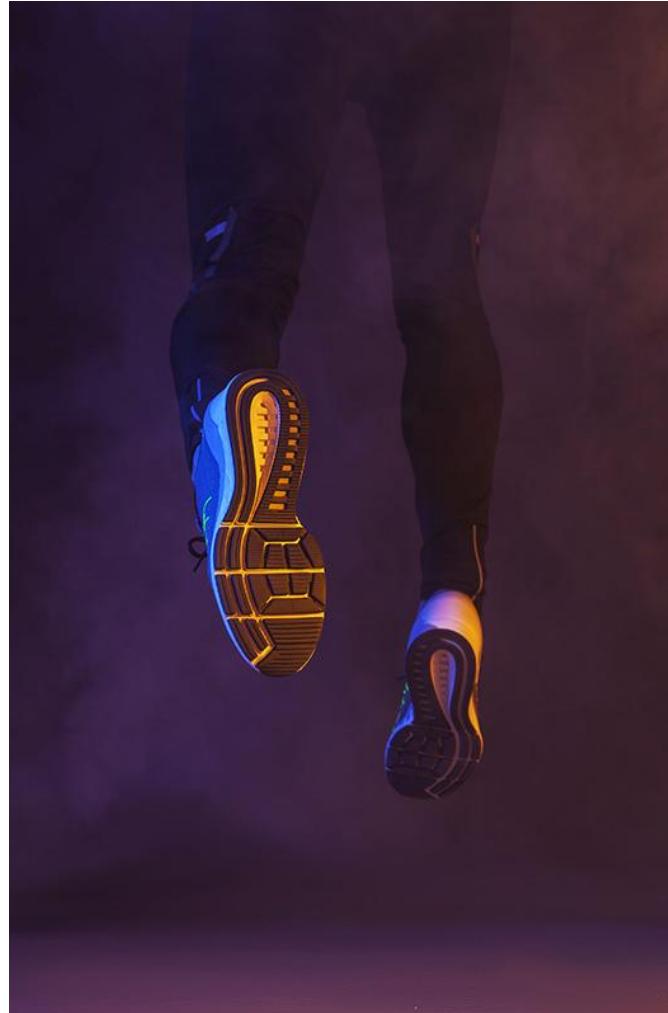
## NEPTUNE

It's the farthest planet from the Sun

# 01 ✕

## SECTION 01

Here you can add a subtitle if you need it





# INTRODUCTION ✘

Do you know what helps you make your point clear? Lists like this one:

- They're simple
- You can organize your ideas clearly
- You'll never forget to buy milk!

The audience won't miss the point of your presentation

# ✖ OUR TEAM ✖



**JANE DOE**



You can use this space to  
describe a team member



**JOANNA SMITH**



You can use this space to  
describe a team member

# THE PROBLEM ✖

Mercury is the closest planet to the Sun and the smallest one in the Solar System. It's only a bit larger than the Moon.



# AWESOME WORDS





## SOLUTION ✨

Mercury is the closest planet to the Sun and the smallest one in the Solar System. It's only a bit larger than the Moon.

# **THEM**

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



# **US**

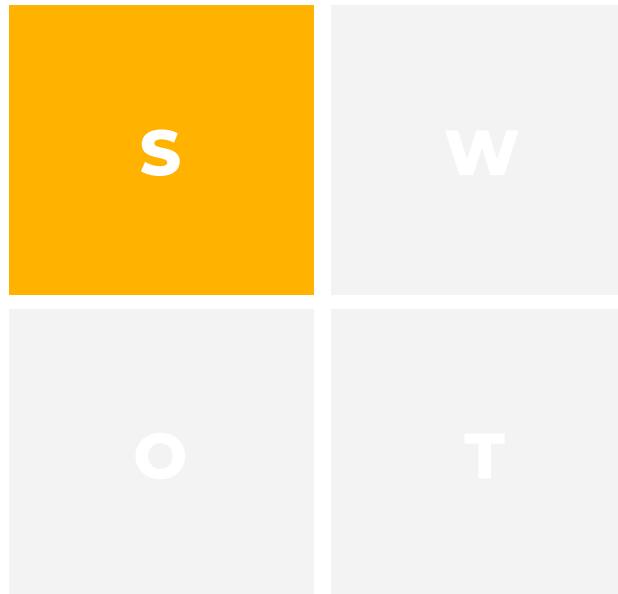
Venus has a beautiful name and is the second planet from the Sun



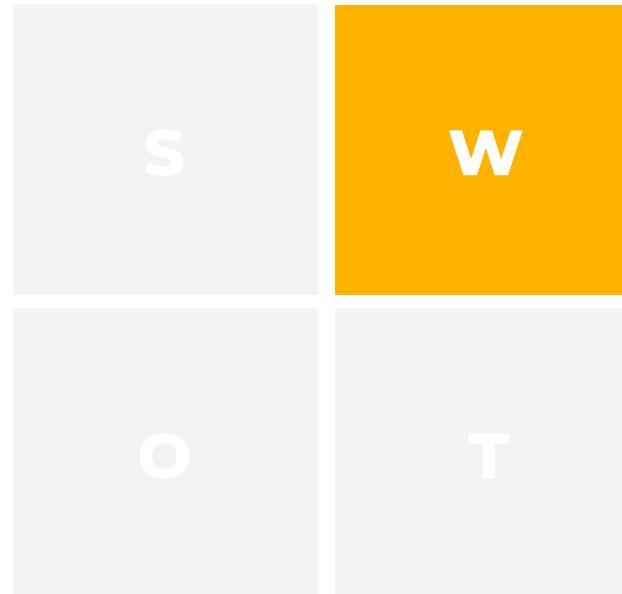
# SWOT ANALYSIS ✘

## ✘ STRENGTHS

Venus has a beautiful name, but it's hot



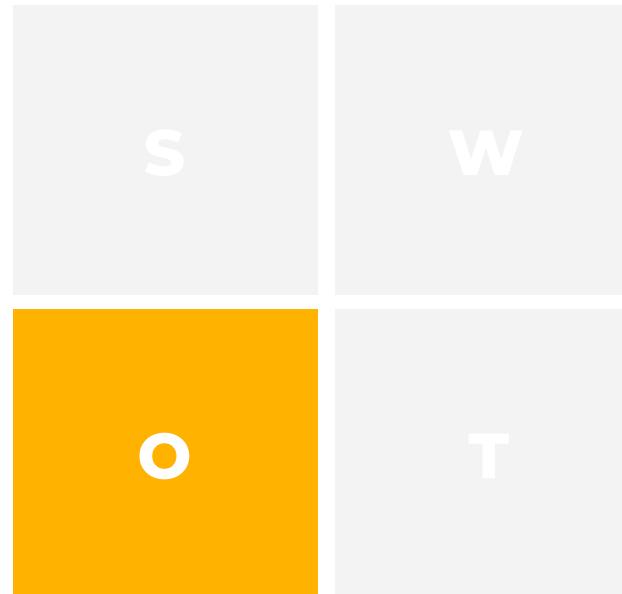
# SWOT ANALYSIS ✕



## WEAKNESSES ✕

Neptune is the farthest planet from the Sun

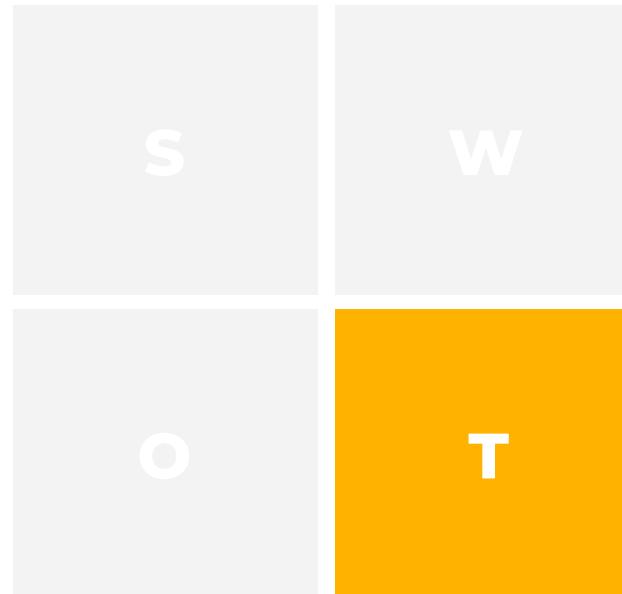
# SWOT ANALYSIS ✕



## ✖ OPPORTUNITIES

Mercury is the closest planet to the sun

# SWOT ANALYSIS ✕

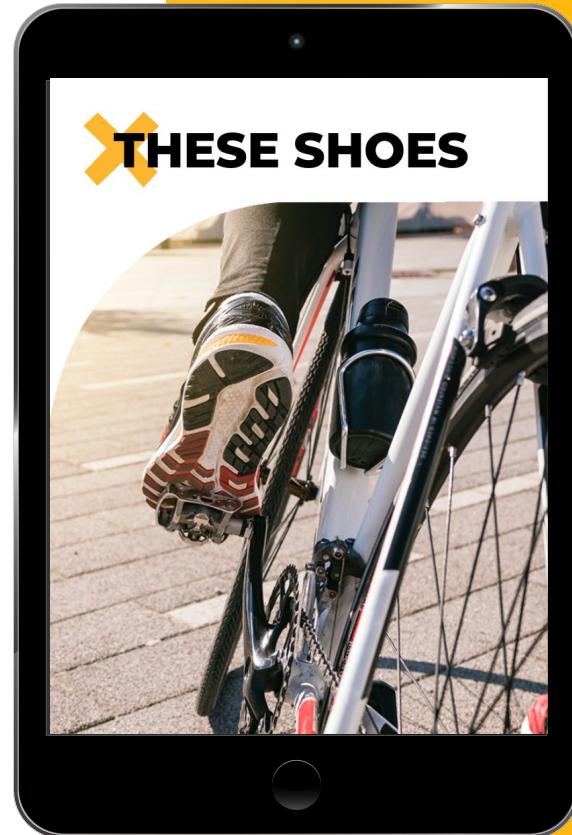


## THREATS ✕

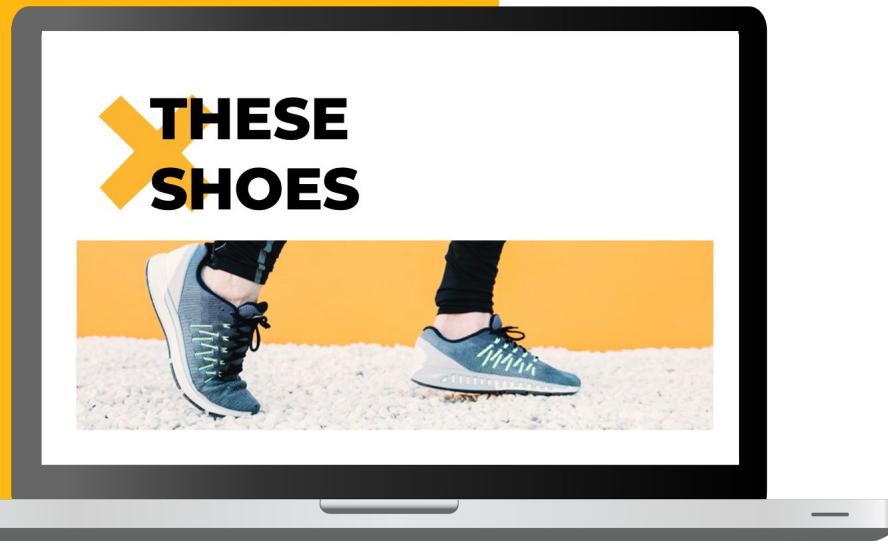
Despite being red, Mars  
is a cold place

# PRODUCT OVERVIEW ✕

You can replace the image on the screen with your own work. Right-click on it and then choose “Replace image” so you can add yours



# PRODUCT DEMO ✘



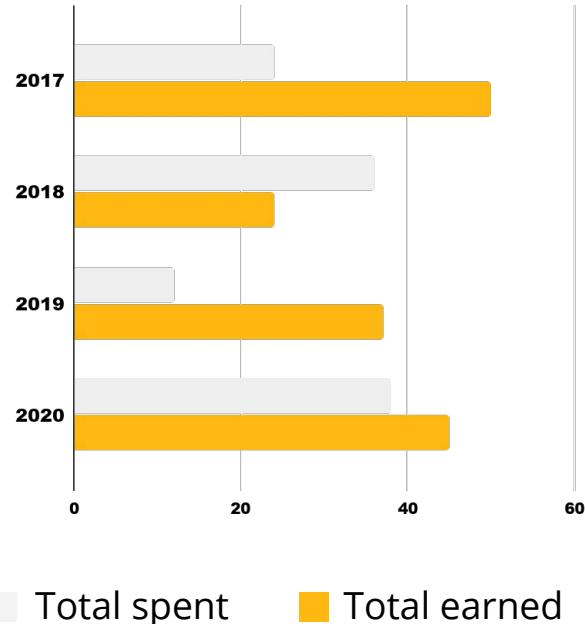
You can replace the image on the screen with your own work. Right-click on it and then choose “Replace image” so you can add yours

# OUR PLANS ✨

	VENUS	SATURN	MARS	
BASIC	yes	no	no	\$50
CUSTOM	yes	yes	no	\$100
COUTURE	yes	yes	yes	\$150



# TRACTION ✕



**50%**

Mars is actually a cold place

**35%**

Venus has a beautiful name



**40,000,000 ×**

Big numbers catch your audience's attention easily

# CASE STUDY ✕

**01**

Venus has a beautiful name but it's terribly hot

**02**

Neptune is the farthest planet from the Sun

**03**

Mercury is the closest planet to the Sun

**04**

Despite being red, Mars is actually a cold place





## REVIEWS ✘



Mercury is the closest planet  
to the Sun

—Jane Doe



Venus has a beautiful name  
but it's terribly hot

—John Smith



Despite being red, Mars is  
actually a cold place

—Kate Duff

X

**AN IMAGE IS  
WORTH A  
THOUSAND  
WORDS**



# AWARDS ✕



# 2016

## AWARD 01

Despite being red, Mars  
is actually a cold place

# 2018

## AWARD 02

Mercury is the closest  
planet to the Sun

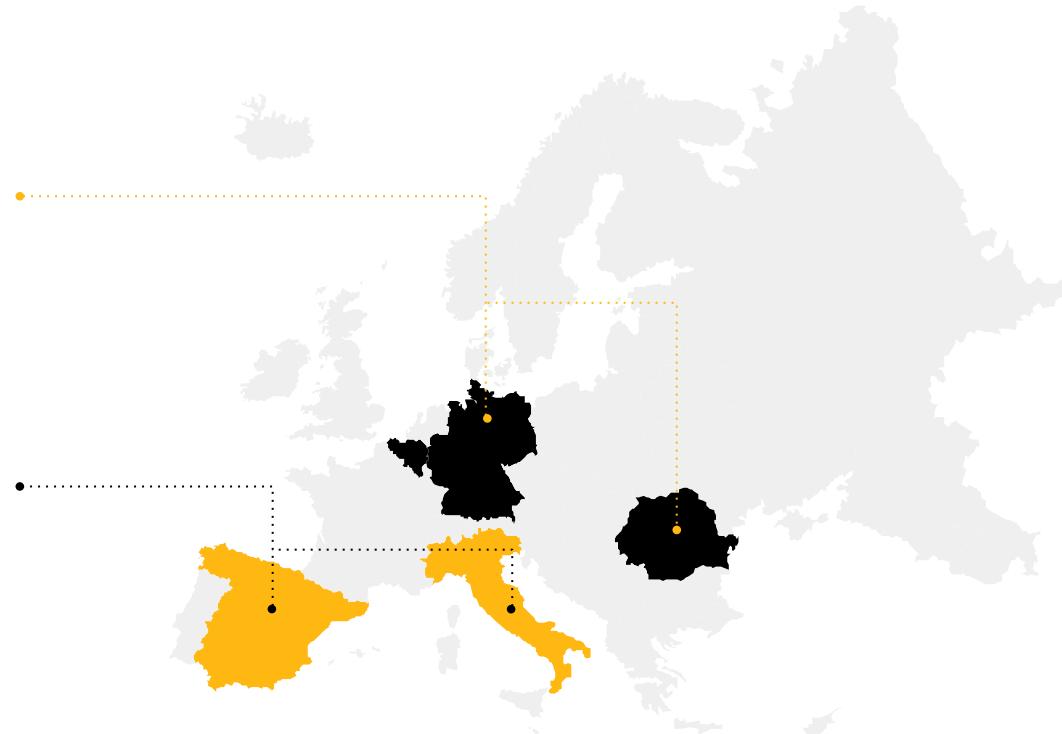
# MARKET SIZE ✕

## MARS

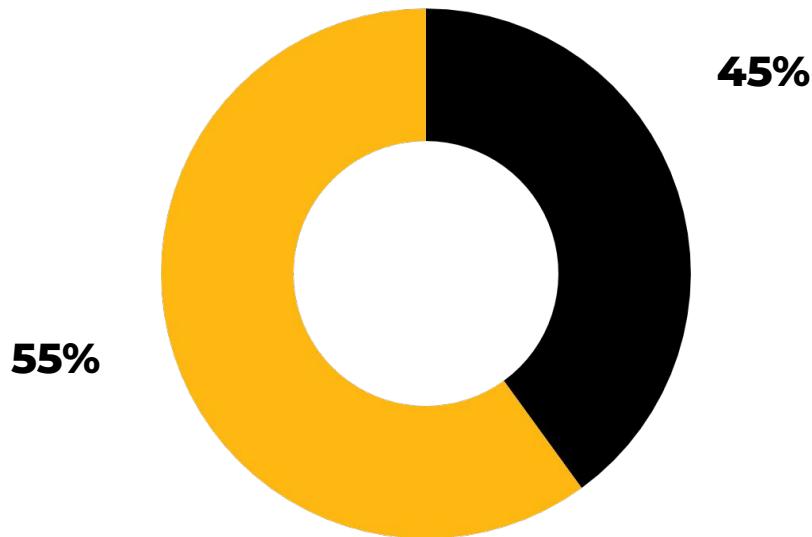
Despite being red, Mars is actually a cold place

## VENUS

Venus has a beautiful name, but it's really hot



# TARGET X



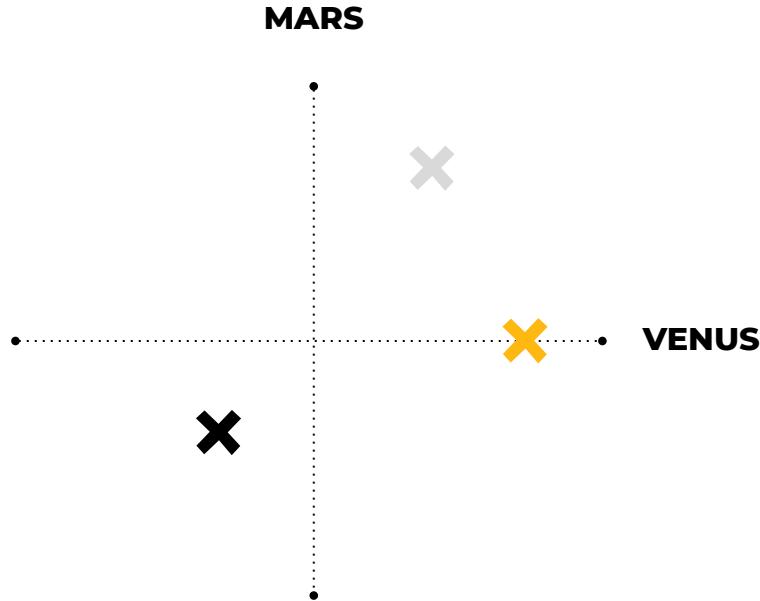
## MARS

Despite being red, Mars is a cold place

## VENUS

Venus has a beautiful name but it's really hot

# COMPETITORS ✕



## ✖ COMPETITOR 01

Despite being red, Mars is actually a cold place

## ✖ COMPETITOR 02

Mercury is the closest planet to the sun

## ✖ COMPETITOR 03

Venus has a beautiful name, but it's hot

# BUSINESS MODEL ✕



## KEY PARTNERS

Despite being red, Mars is actually a cold place

## VALUE PROPOSITION

Mercury is the closest planet to the sun

## KEY RESOURCES

Venus has a beautiful name, but it's hot

# TIMING ✕

**01**



Venus has a  
beautiful name  
but it's terribly hot

**02**



Neptune is the  
farthest planet  
from the Sun

**03**



Mercury is the  
closest planet  
to the Sun

**04**



Despite being red,  
Mars is actually a  
cold place

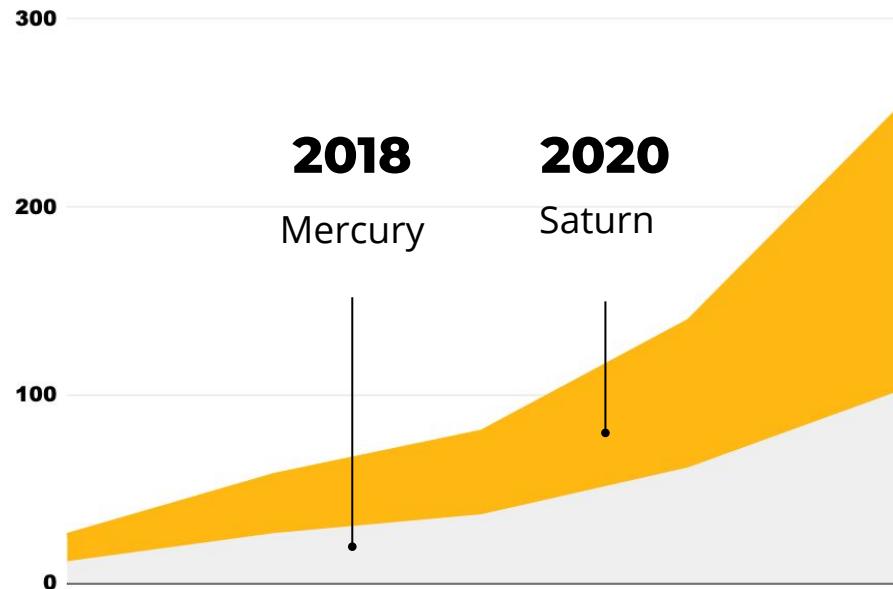
# PREDICTED GROWTH ✕

## MARS

Despite being red, Mars is a cold place

## VENUS

Venus has a beautiful name but it's really hot





## ✖ INVESTMENT

**06%** ✖

Despite being red, Mars is  
actually a cold place



**25%** ✖

Venus has a beautiful  
name, but it's terribly hot

**69%** ✖

Neptune is the farthest  
planet from the Sun



# THANKS

Do you have any questions?

[your-email@freepik.com](mailto:your-email@freepik.com)

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# ALTERNATIVE RESOURCES ✕

## PHOTOS

- Low section of fitness couple jumping in the air at outdoors
- Close-up woman holding small shoe
- Sport equipment
- Woman tying her shoes in next to a building
- Side view male basketball player tying shoe laces



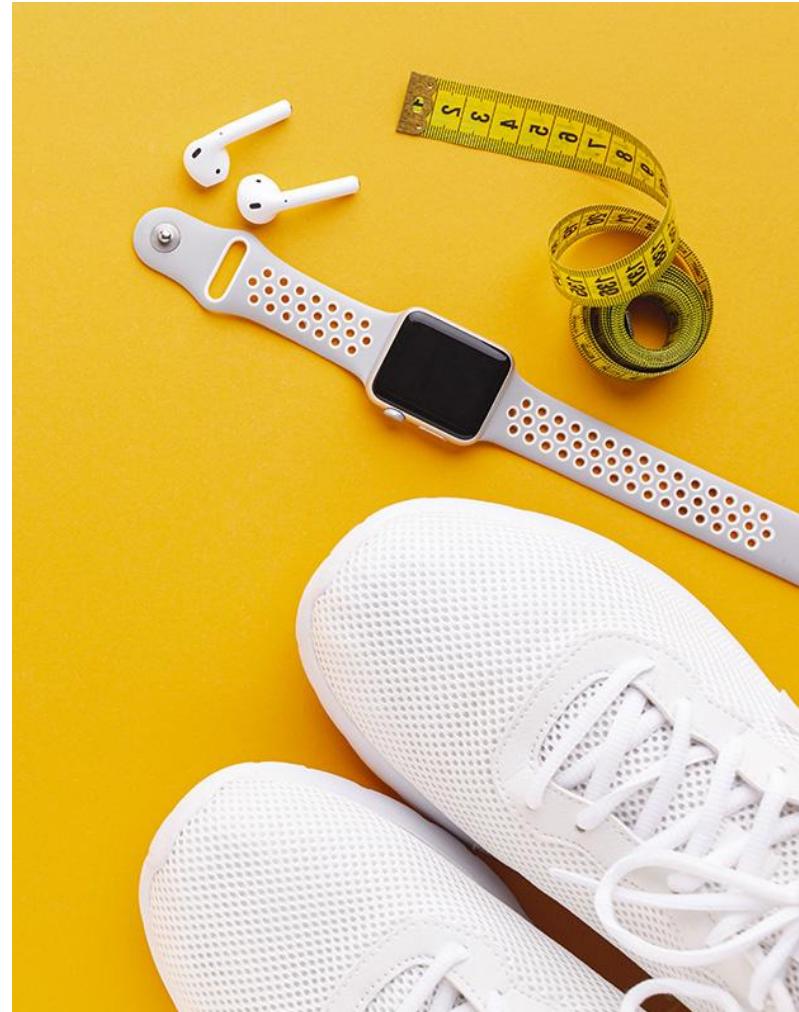
# RESOURCES ✕

## VECTORS

- Black ipad
- Responsive web design technology

## PHOTOS

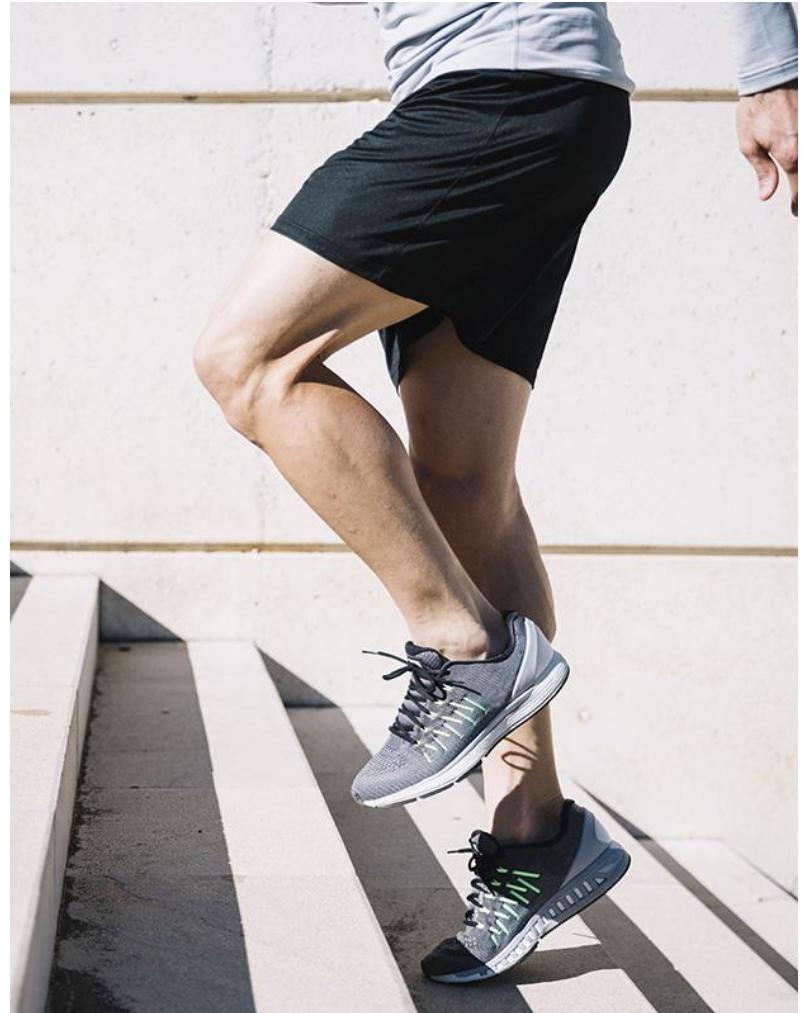
- Man balancing skateboard on railing
- Close-up woman shoes for adventure
- Woman sitting rug using smartphone listening music
- Close-up female tying shoelaces
- Top view arrow asphalt shoes
- Crop person running on yellow background
- Medium shot of man balancing on skateboard
- Crop legs leaping in smoke



# RESOURCES ✕

## PHOTOS

- Young woman stretching at the street
- Sport equipment
- Male cyclist's foot on bicycle pedal riding bike at outdoors
- Crop man hopping upstairs
- Sneakers and sport watch with copy space
- Anonymous man in sportswear doing crouch start
- Anonymous woman performing leaps
- Crop legs sneakers running
- Crop man doing walking exercise on steps
- Crop woman leaping training
- Crop woman sitting on longboard



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#000000

#f3f3f3

#d9d9d9

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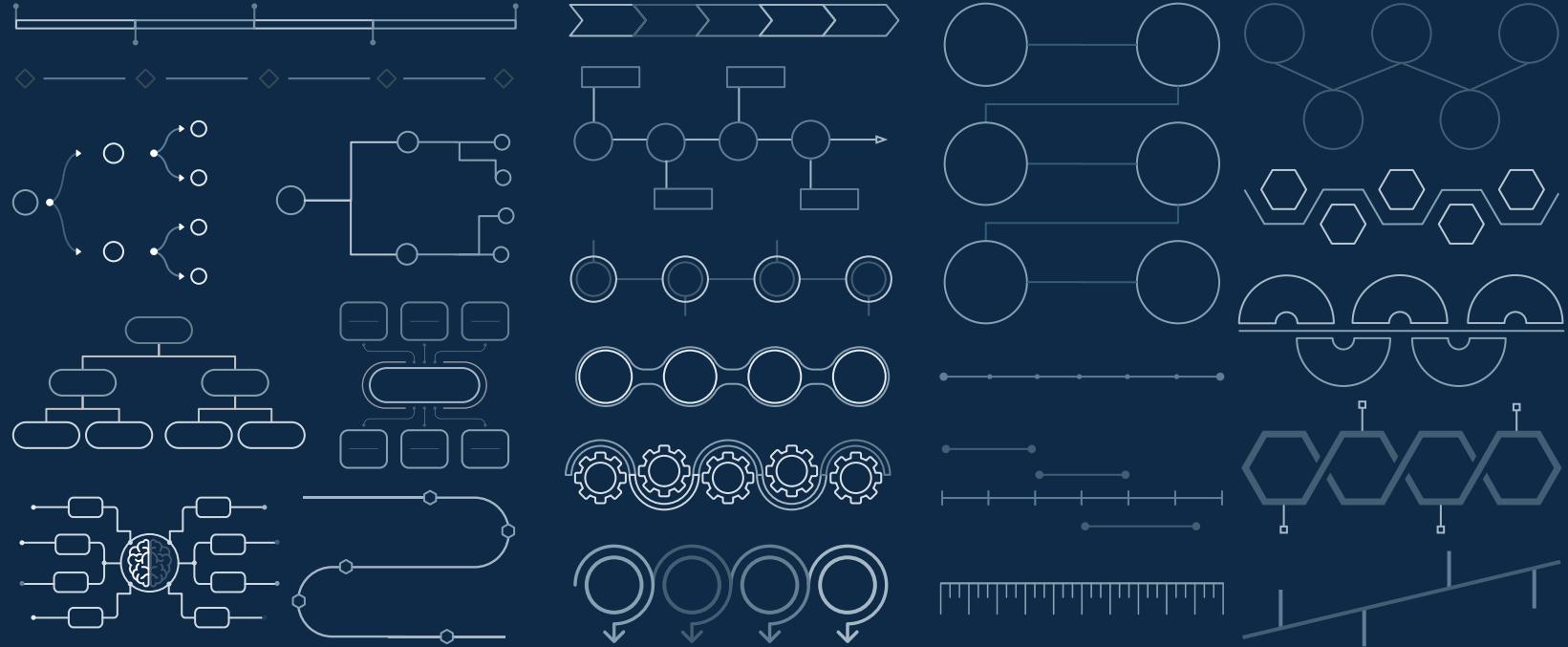
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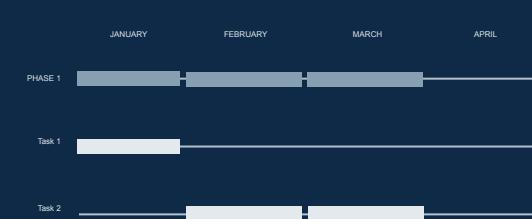
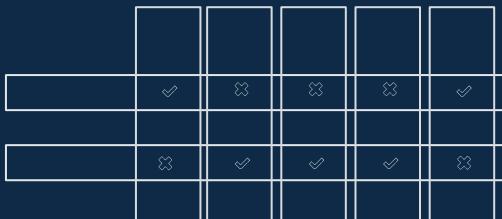
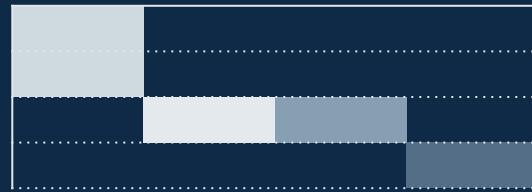
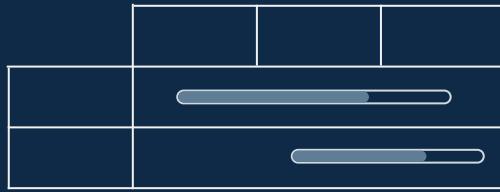
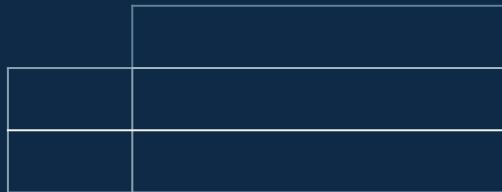
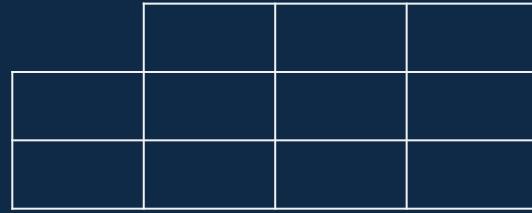
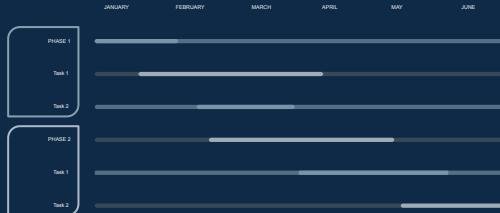
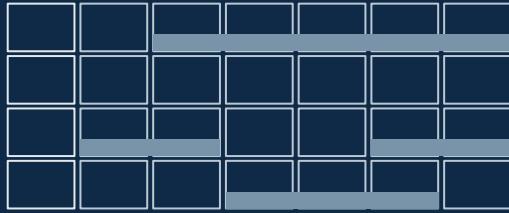
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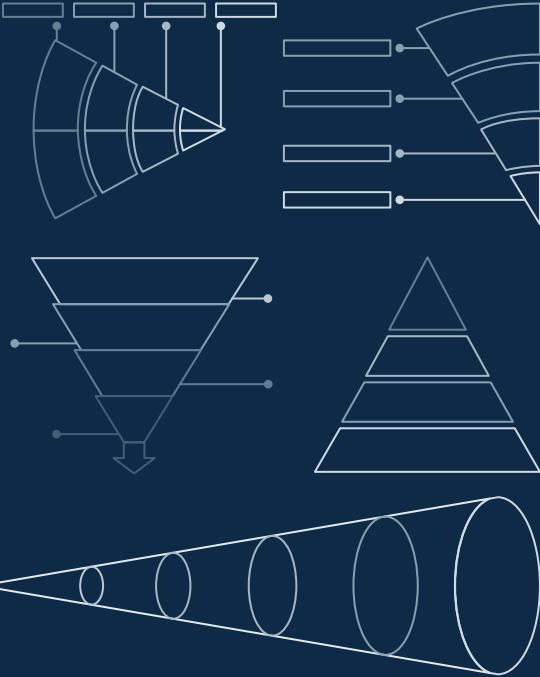
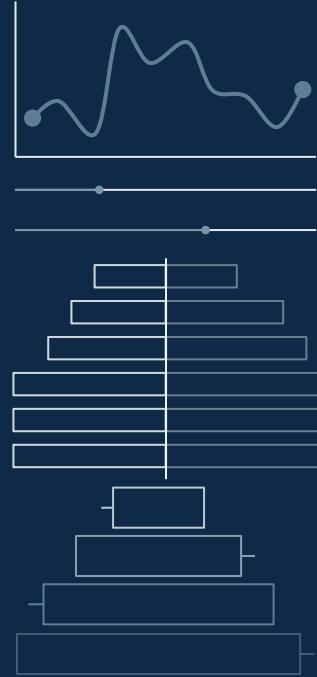
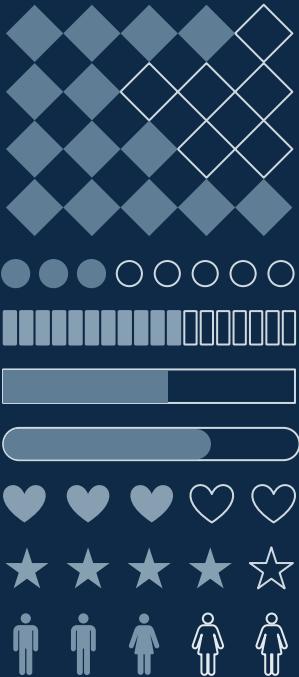
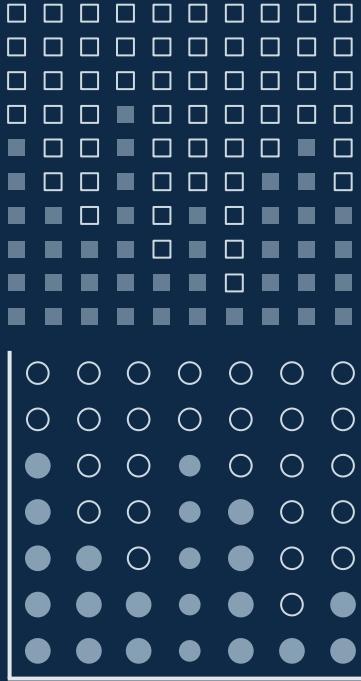












# ...and our sets of editable icons

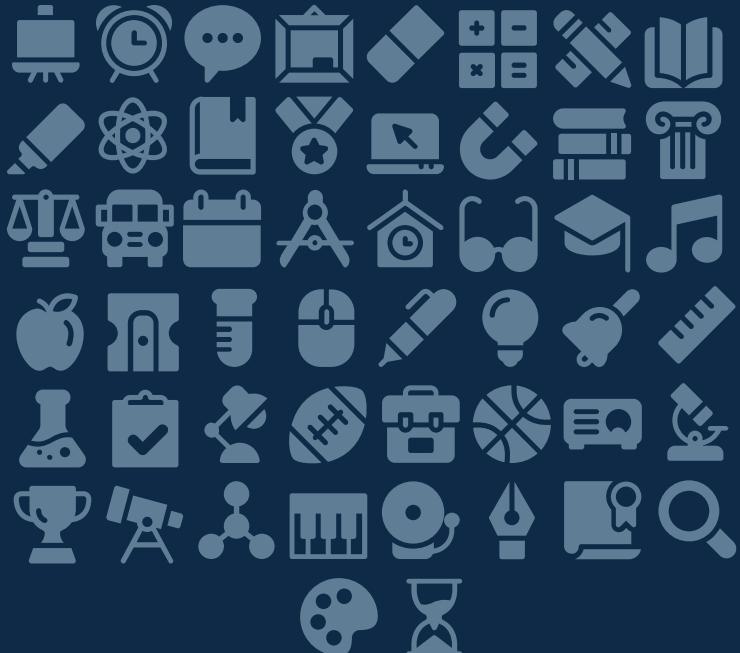
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## Help & Support Icons



# Avatar Icons



## Creative process Icons



## Performing Arts Icons



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# SEO & Marketing Icons



