HouseIt

Discover your perfect home with ease

Simplifying Property Management

By Team UnderDog

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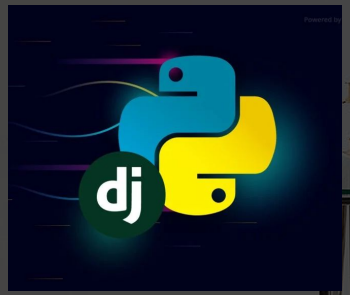
Technologies used

Frontend/ Backend

Django



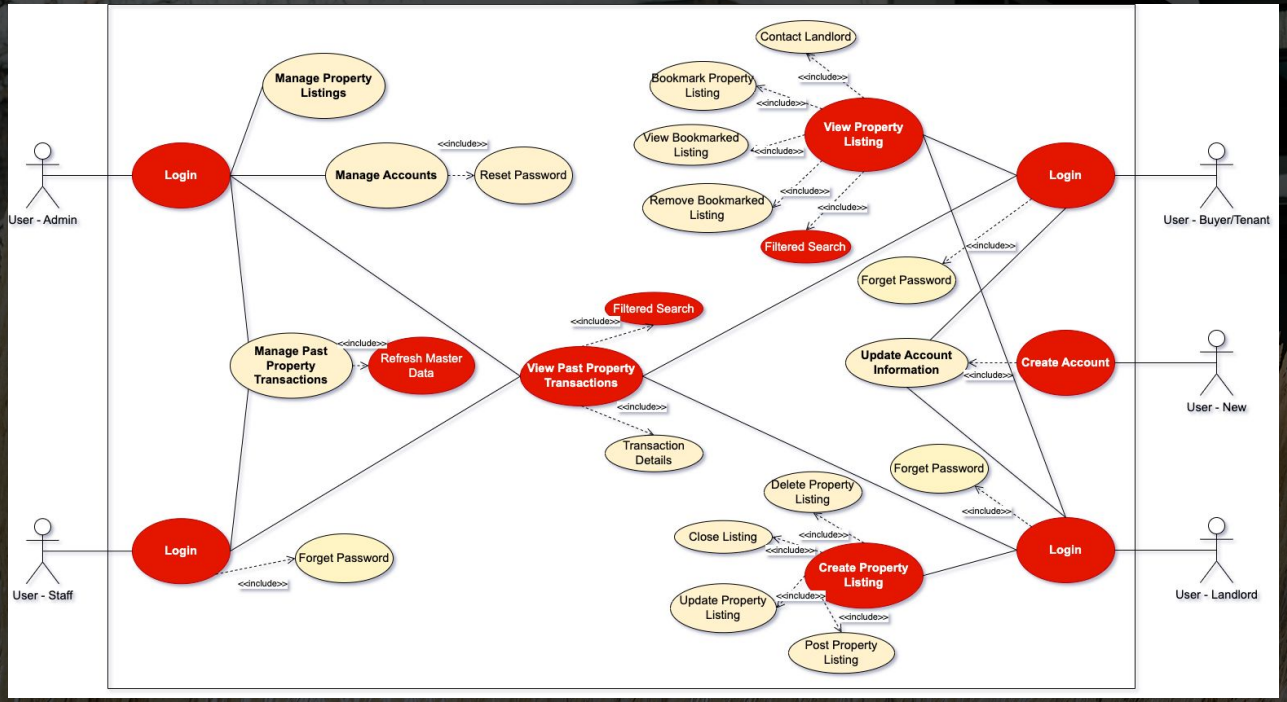
Database

SQlite3

APIs

Data.gov.sg API

Use Case Diagram



Main Use Cases

1. Create account
2. Login
3. Create property listing
4. View property listing
5. Bookmark property listing
6. Historical Property Transactions Data
7. Filtered Search for Property Listing

Expected Users

Property Owners
People who buy property
Developers

Requirements: Functional (examples)

- **User login and registration**: Username must be unique, valid email and phone number must be given. If user forgot password, user can reset their password
- **Property listings**: create property must include details of house e.g. unit number, price, etc. User can delist property or do a filter search
- Refresh master data/ Master data filtered search: mostly for admin

Requirements: Non-Functional

Performance:

1. Waiting time must not be longer than 5 seconds on the website (e.g. website must load within 3 seconds, login page must load within 5 seconds)

Usability:

1. Error messages with proper indication must be displayed clearly to help the user.
2. Easy to navigate for help e.g. contact and information

Reliability:

1. The system must be able to sustain with minimal crashing.

Functional Test Cases (Login/Logout)

Test Output	Expected Output	Actual Output
User inputs a valid username and password	System authenticates user login details and direct them to the home page with additional navigation links. (Homepage for each type of user is different)	System would authenticate user login details and direct them to the home page with additional navigation links.
User inputs wrong username/ password	System authenticates user login details and displays an error message “Invalid username or password”.	System authenticates user login details and displays an error message “Invalid username or password”.
User clicks on the “Logout” option under profile icon	System logs out user and redirects them to the login page	System logs out user and redirects them to the login page

Functional Test Cases (Register)

Test Output	Expected Output	Actual Output
User inputs username, first name, last name, valid email address, address, phone number and password	System will redirect user to login page with a message saying "Account was created successfully".	System will redirect user to login page with a message saying "Account was created successfully".
User inputs an invalid email address	System will return an error depending why the email address is invalid. Three options	System will return an error depending why the email address is invalid. Three options
User inputs an existing username	System will return an error "Username already Exists !!" and allow user to rekey username	System will return an error "Username already Exists !!" and allow user to rekey username

Functional Test Cases (Property Listing)

Test Output	Expected Output	Actual Output
Add Property For Sale/Rental Listing User inputs all fields on the form of "Add Property For Sale/Rental Listing" [Owner Only]	System will redirect user to home page with a message saying "Sale/Rental Property has been listed successfully".	System will redirect user to login page with a message saying "Account was created successfully".
Add Property For Sale/Rental Listing User creates the property listing without inputting all the fields [Owner Only]	System will return a error message "Please fill in this field" depending on the empty field	System will return a error message "Please fill in this field" depending on the empty field
View Property For Sale/Rental Listing User clicks on a Property Listing that he/she likes [All Users]	System will redirect user to the property listing page showcasing property details and owner details	System will redirect user to the property listing page showcasing property details and owner details

Functional Test Cases (Property Listing)

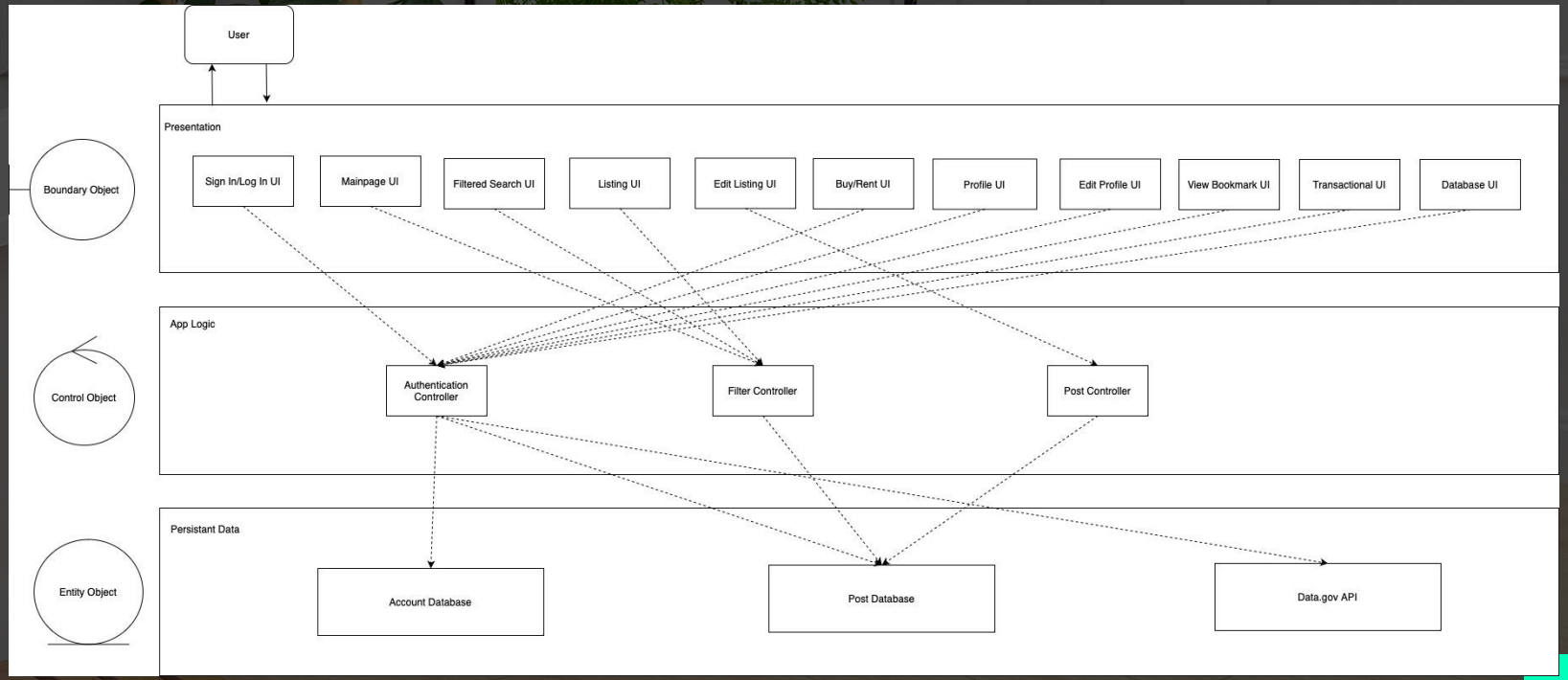
Test Output	Expected Output	Actual Output
Bookmark Sale/Rental Listing User selects the bookmark icon on the sale/rental property [All Users]	System will refresh and the icon will change colour from grey to green. (Listing will be added to bookmarked listings page)	System will refresh and the icon will change colour from grey to green.
Contact Owner User inputs his/her contact details and indicates interest in the property listing by sending a message [Buyer / Tenant Only]]	System will display a message "Thanks for contacting us! We will reach out to you shortly!!" with a notification sent out to the Owner/Agent	System will display a message "Thanks for contacting us! We will reach out to you shortly!!" with a notification sent out to the Owner/Agent

Functional Test Cases (Historical Property Transactions Data)

Test Output	Expected Output	Actual Output
Filtered Search for Sale/Rent Property User selects Town: Jurong West; Street: Jurong West St Flat Type: 3-Room; Year: Any	System will return all relevant results in order of date showing the most recent transaction first	System will return all relevant results in order of date showing the most recent transaction first
Refresh Historical Property Transactions Data User selects the "Refresh Master Data" button [Staff / Admin User Only]	System will load for awhile and display the message "Master Data has been refreshed successfully !!" .	System will load for awhile and display the message "Master Data has been refreshed successfully !!".

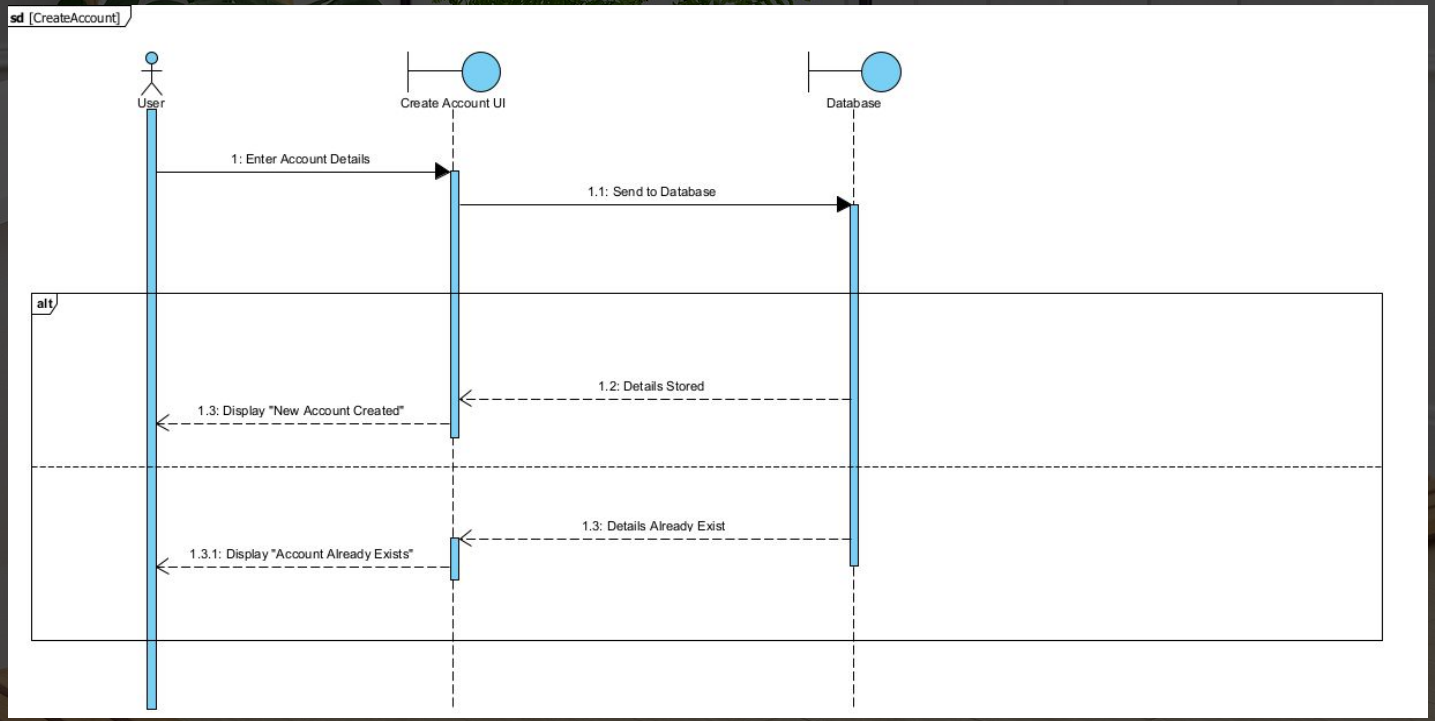
Live Demonstration!

System Architecture Diagram

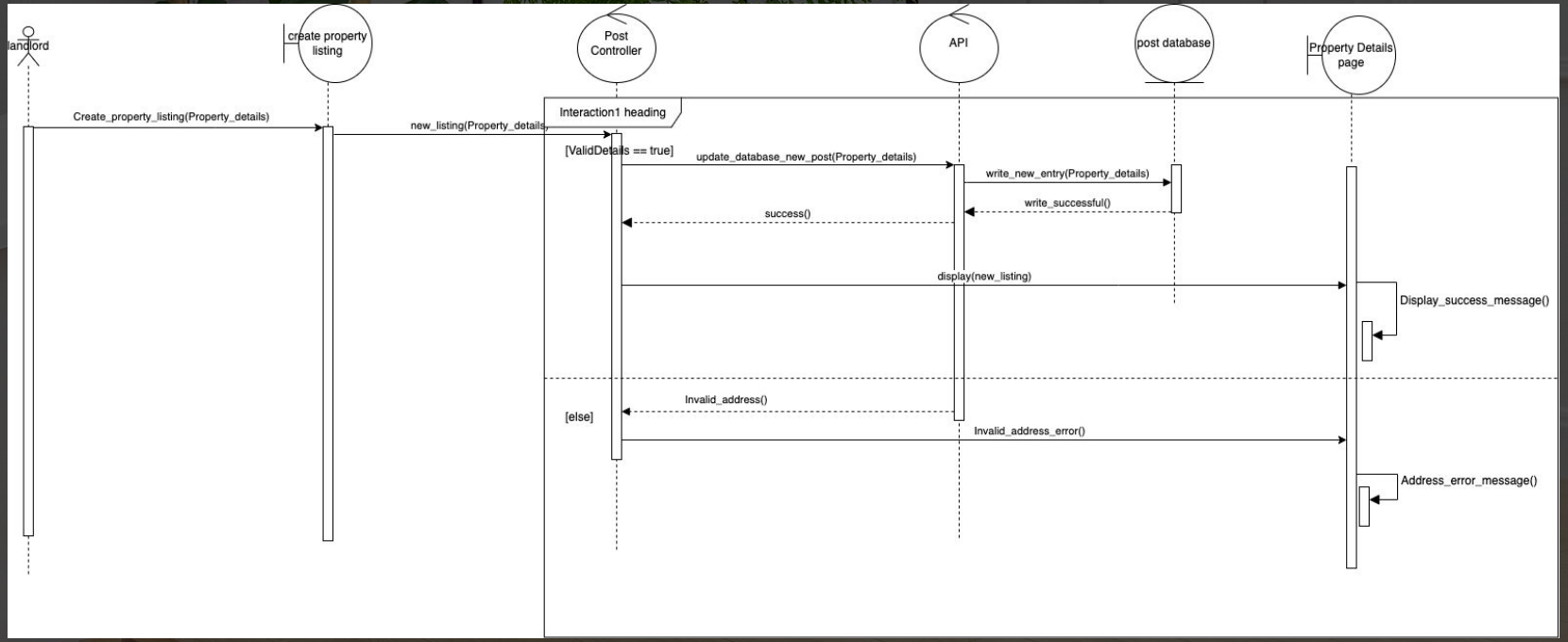


Model-View-Controller Architecture

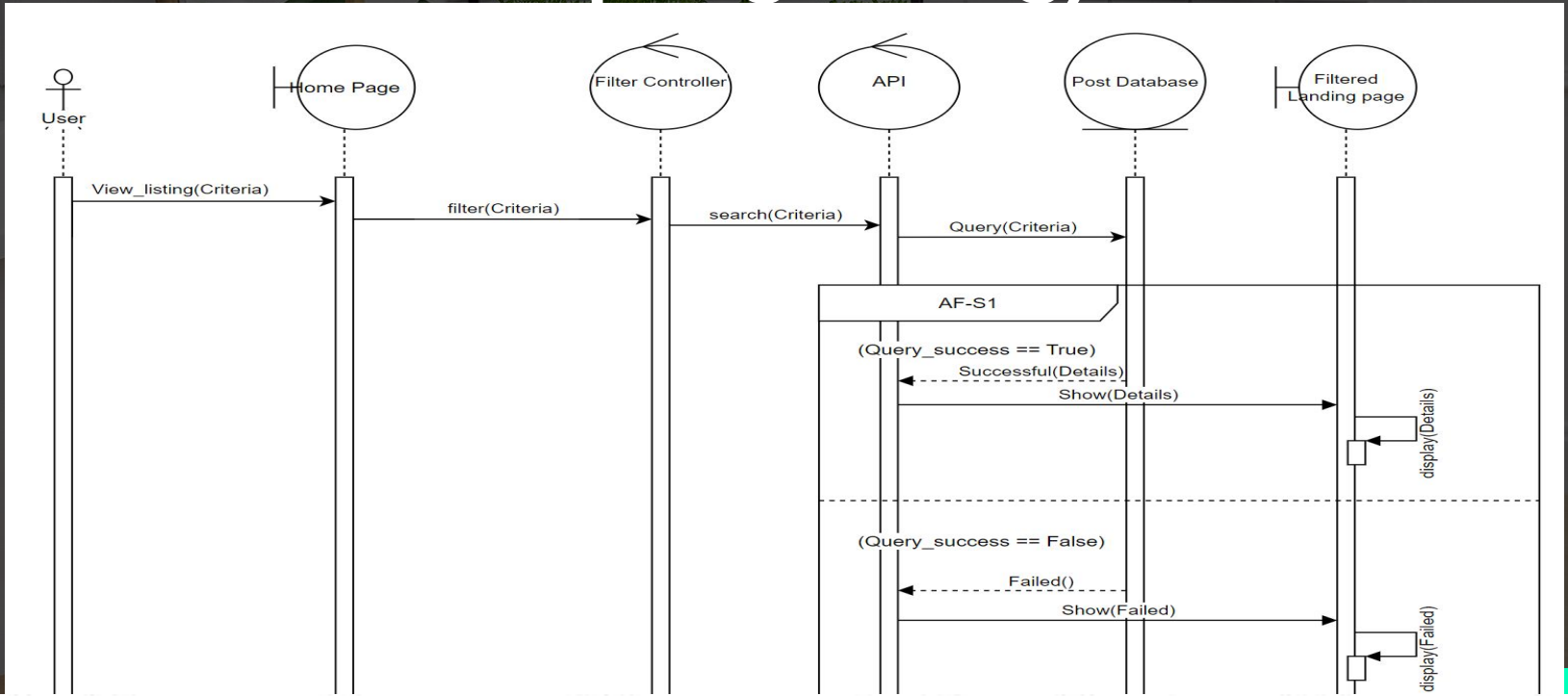
Sequence Diagram (User Registration)



Sequence Diagram (Create property Listing)

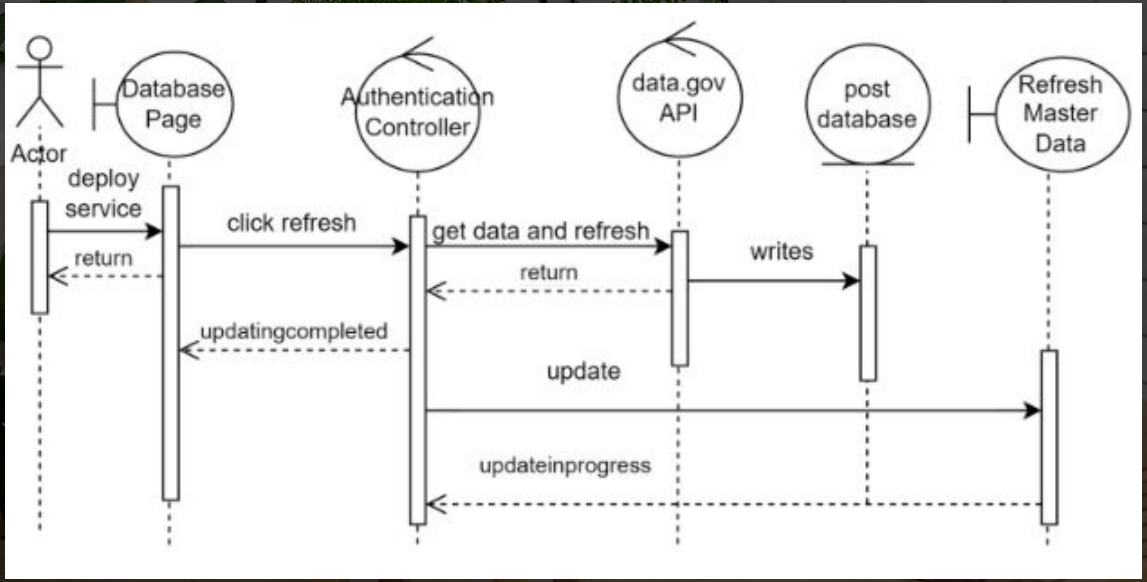


Sequence Diagram (View Filtered Property Listing)



1. Users must have an existing account and must be logged into account.
2. User's device should have access to the internet.

Sequence Diagram (Refresh Master Data)



1. User's device should have access to the internet.
2. Users must have logged on to an account with administrative access.

Software Engineering Practices!

Single Responsibility Principle

SRP states each class should have one main purpose. This will allow for easy debugging, maintaining and for the code to be reused. Each class in the models.py file has its own responsibility.

- User class specifies the attributes in the user model.
- UserMangaer class manages the creation of user models.
- Masterpropertyrentaldata defines the attributes needed for the matched database tables.

```
class User(AbstractUser):
    username = models.CharField(max_length=32, unique=True,default=False)
    is_admin = models.BooleanField(default=False)
    email = models.EmailField(('email address'), unique=True)
    phone = models.TextField(max_length=15,blank=True)
    first_name = models.CharField(max_length=150, blank=True)
    last_name = models.CharField(max_length=150, blank=True)
    address = models.CharField(max_length=255, blank=True)
    user_type = models.CharField(max_length=10)

    class Meta:
        swappable = 'AUTH_USER_MODEL'
```

Open-Closed Principle

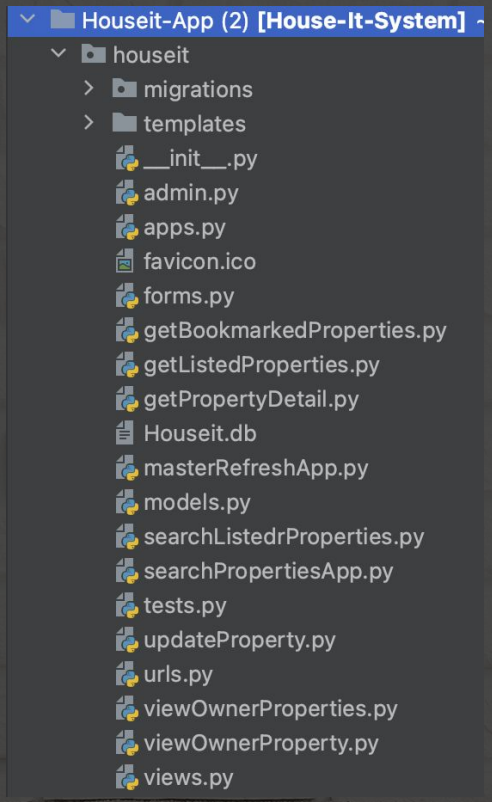
OCP states that software entities (classes, modules, functions, etc.) should be open for extension but closed for modification. This means that we should be able to add new functionality to an application without modifying the existing codebase.

- The UserManager class allows for the creation of two different types of users: regular users and superusers

```python
class UserManager(BaseUserManager):
    """Define a model manager for User model with no username field."""

    use_in_migrations = True

    def _create_user(self, email, password, **extra_fields):
        """Create and save a User with the given email and password."""
        if not email:
            raise ValueError('The given email must be set')
        email = self.normalize_email(email)
        user = self.model(email=email, **extra_fields)
        user.set_password(password)
        user.save(using=self._db)
        return user

    def create_user(self, email, password=None, **extra_fields):
        """Create and save a regular User with the given email and password."""
        extra_fields.setdefault('is_staff', False)
        extra_fields.setdefault('is_superuser', False)
        return self._create_user(email, password, **extra_fields)

    def create_superuser(self, email, password, **extra_fields):
        """Create and save a SuperUser with the given email and password."""
        extra_fields.setdefault('is_staff', True)
        extra_fields.setdefault('is_superuser', True)
```

Conclusion

- Modularity
- Reusability
- Abstraction



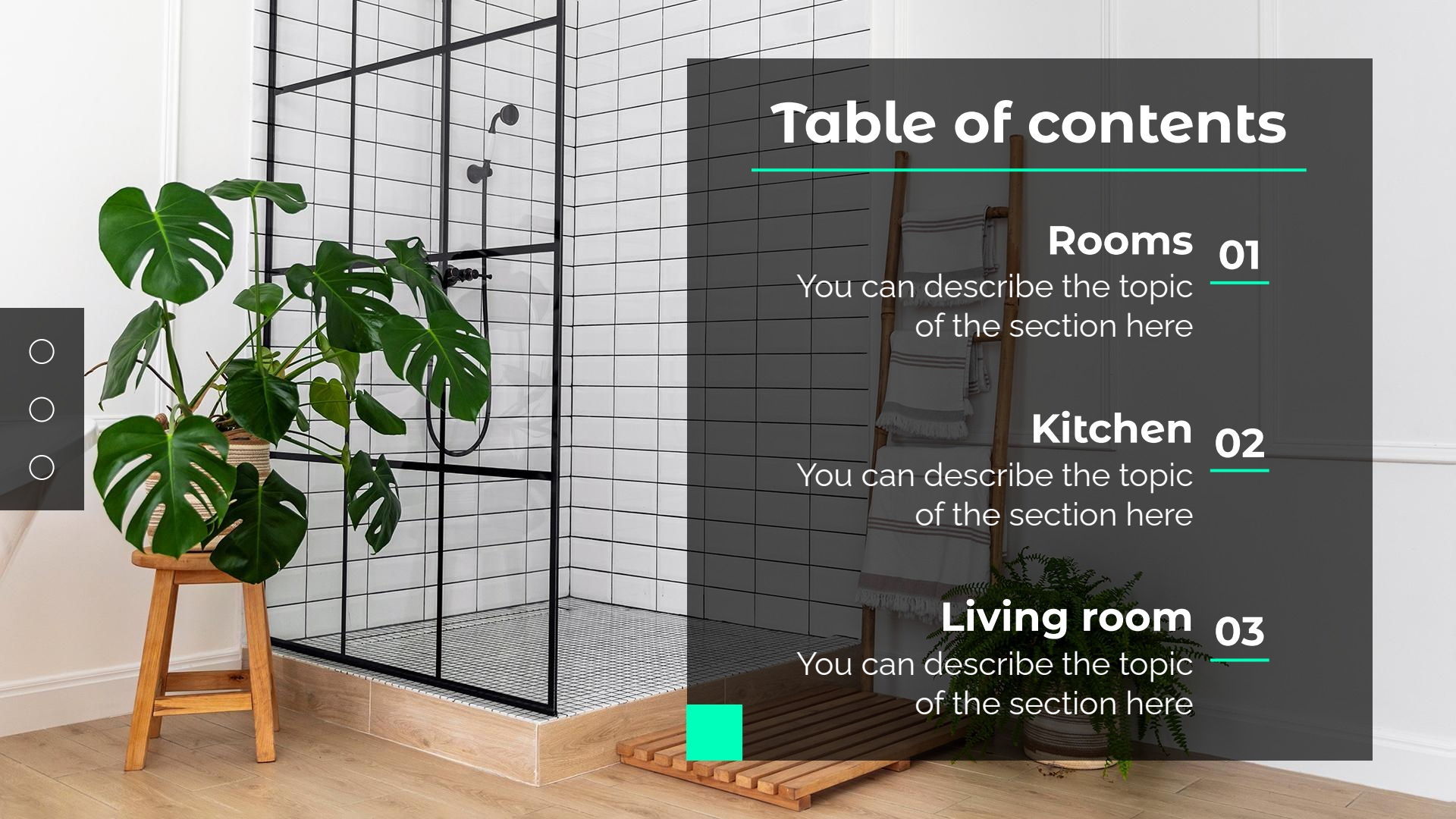


Table of contents

Rooms 01
You can describe the topic of the section here

Kitchen 02
You can describe the topic of the section here

Living room 03
You can describe the topic of the section here

Whoa!

This can be the part of the presentation where you introduce yourself, write your email...

01 Rooms

You can enter a subtitle here if you need it

Use Case Diagram

Room 1

Mars is a cold planet

Create Account

Jupiter is a big planet

Room 2

Mercury is a small planet

Room 4

Neptune is far away

Welcome to the home of your dreams!

Rental statistics

Venus

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

Mars

Despite being red, Mars is actually a cold place. It's full of iron oxide dust

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

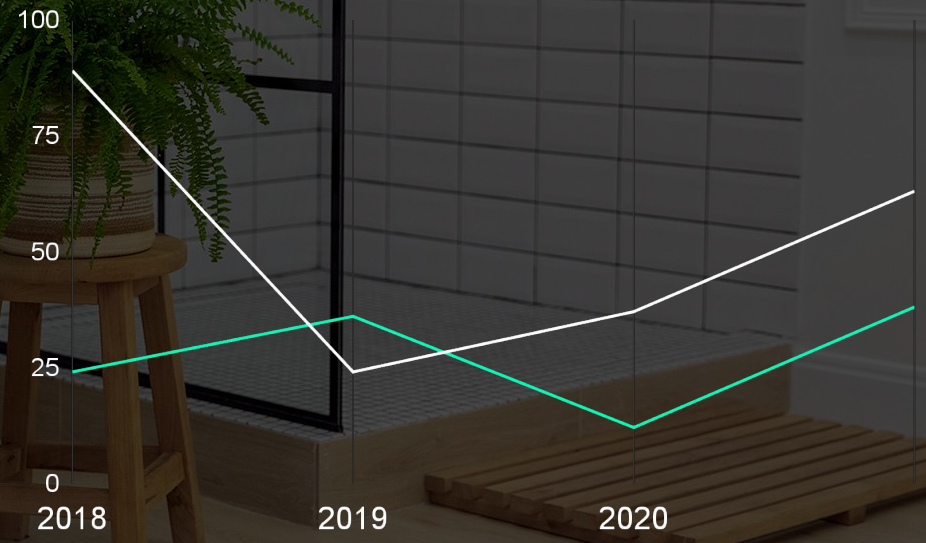
Increase in home sales

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

$70,000

Jupiter is the biggest planet

$50,000

Saturn is the ringed planet

$80,000

Neptune is far away from us

02 Kitchen

You can enter a subtitle here if you need it

About the kitchen

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!

And the most important thing: the audience won't miss the point of your presentation

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

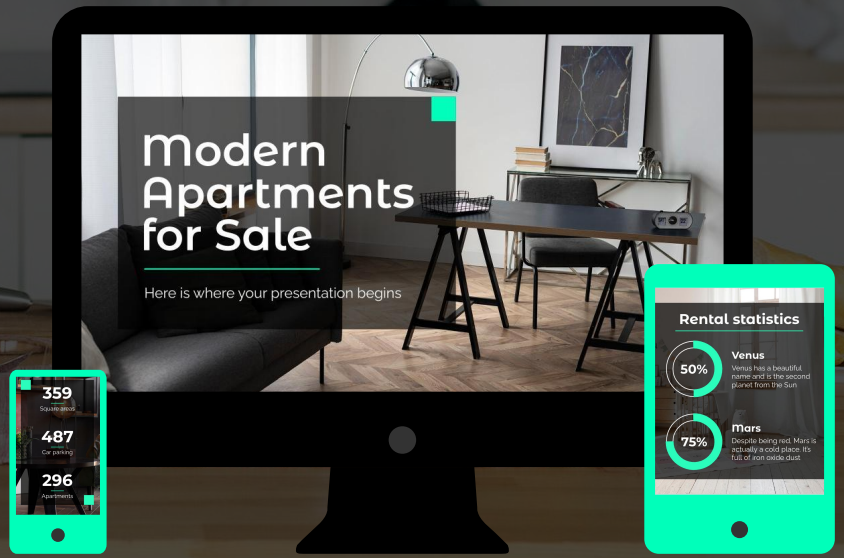
Venus is the second planet from the Sun

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”



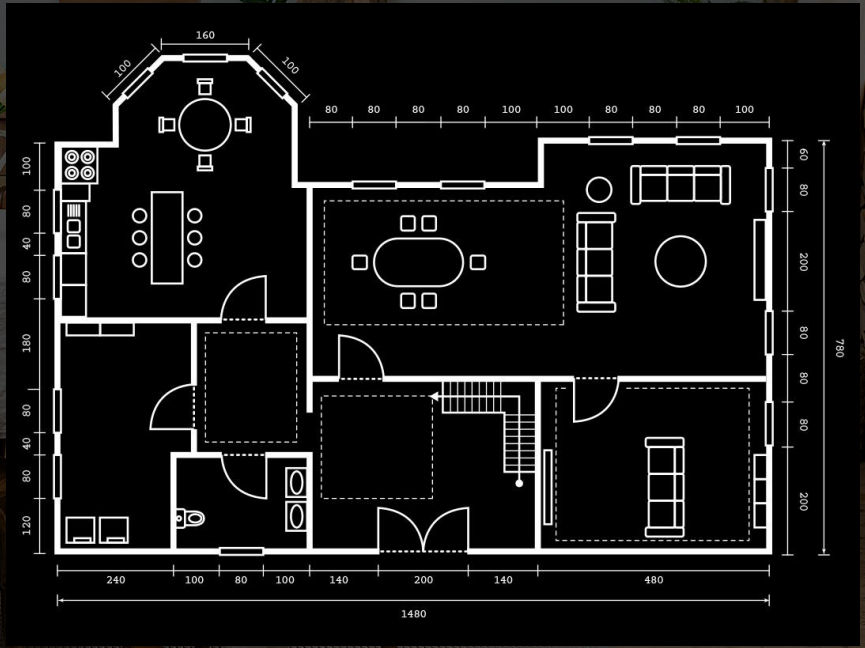
Blueprints

Floor no: 1

Rooms: 3

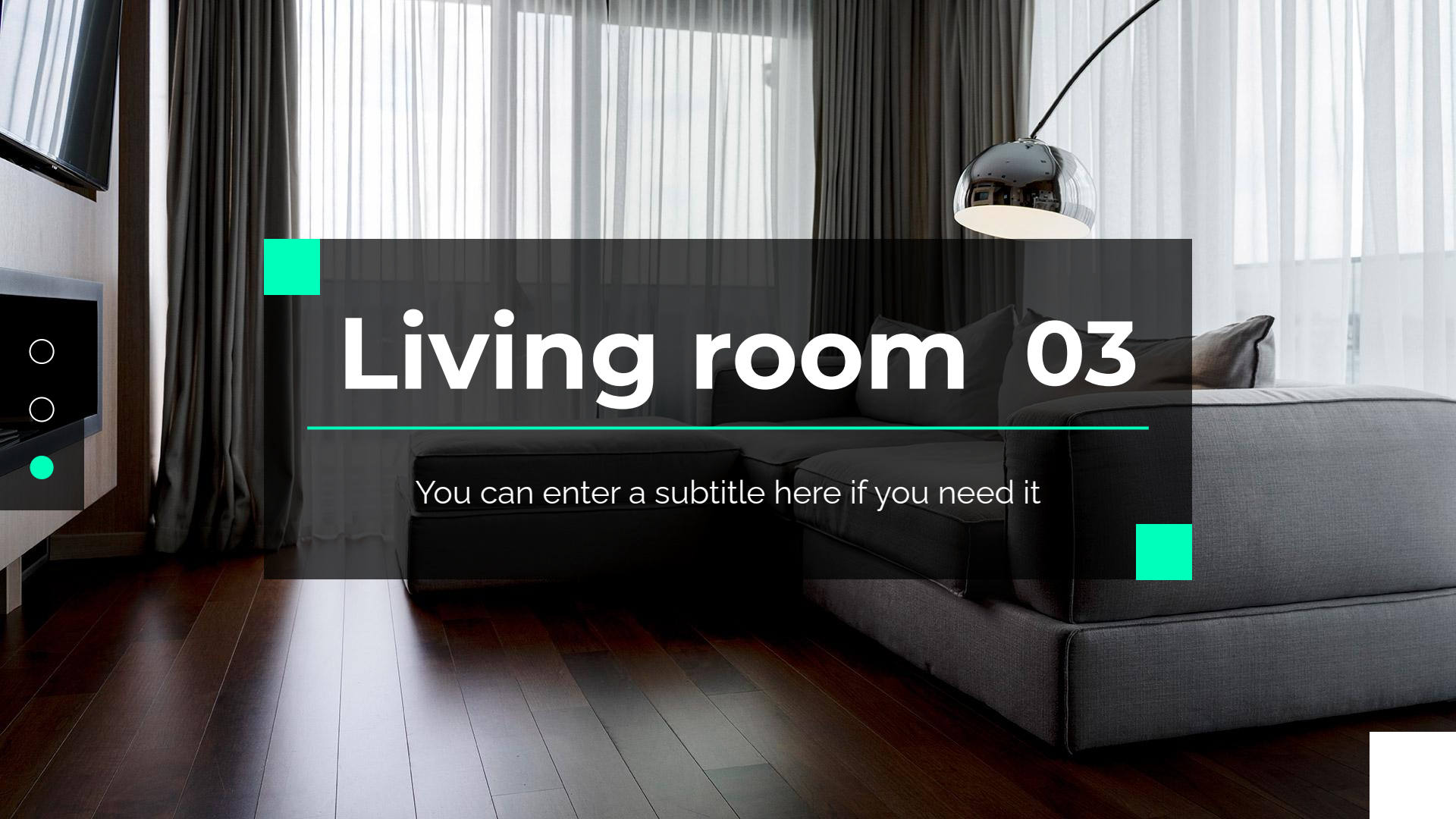
Bathrooms: 2

Windows: 2



A picture always reinforces the concept

Images reveal large amounts of data, so remember: use an image instead of a long text. Your audience will appreciate it



Living room 03

You can enter a subtitle here if you need it

Our services

Mars

Mars is actually a very cold place

Venus

It's the second planet from the Sun

Jupiter

It's the biggest planet in the Solar System

Saturn

Saturn is a gas giant and has several rings

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

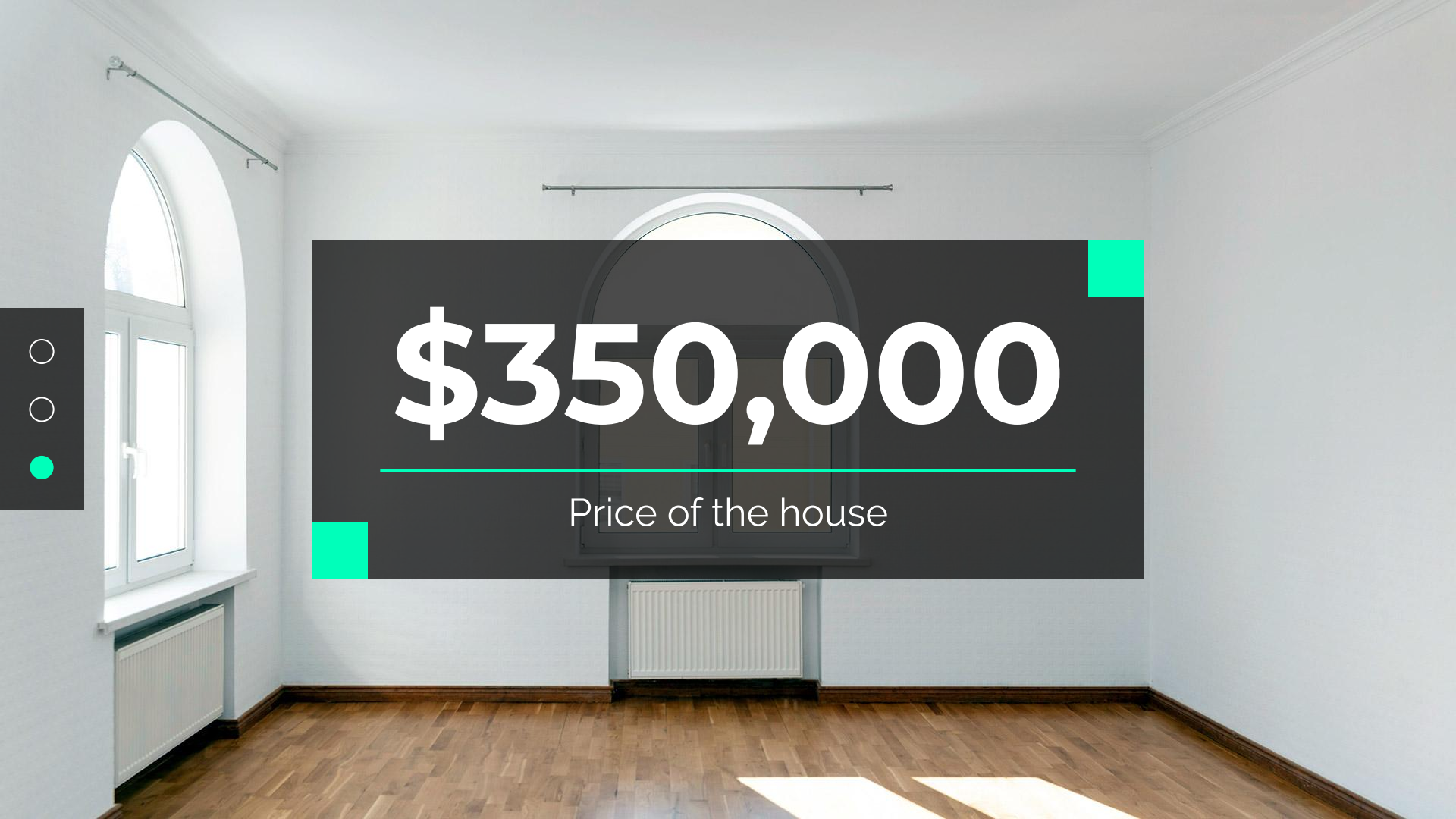
It's the closest planet to the Sun

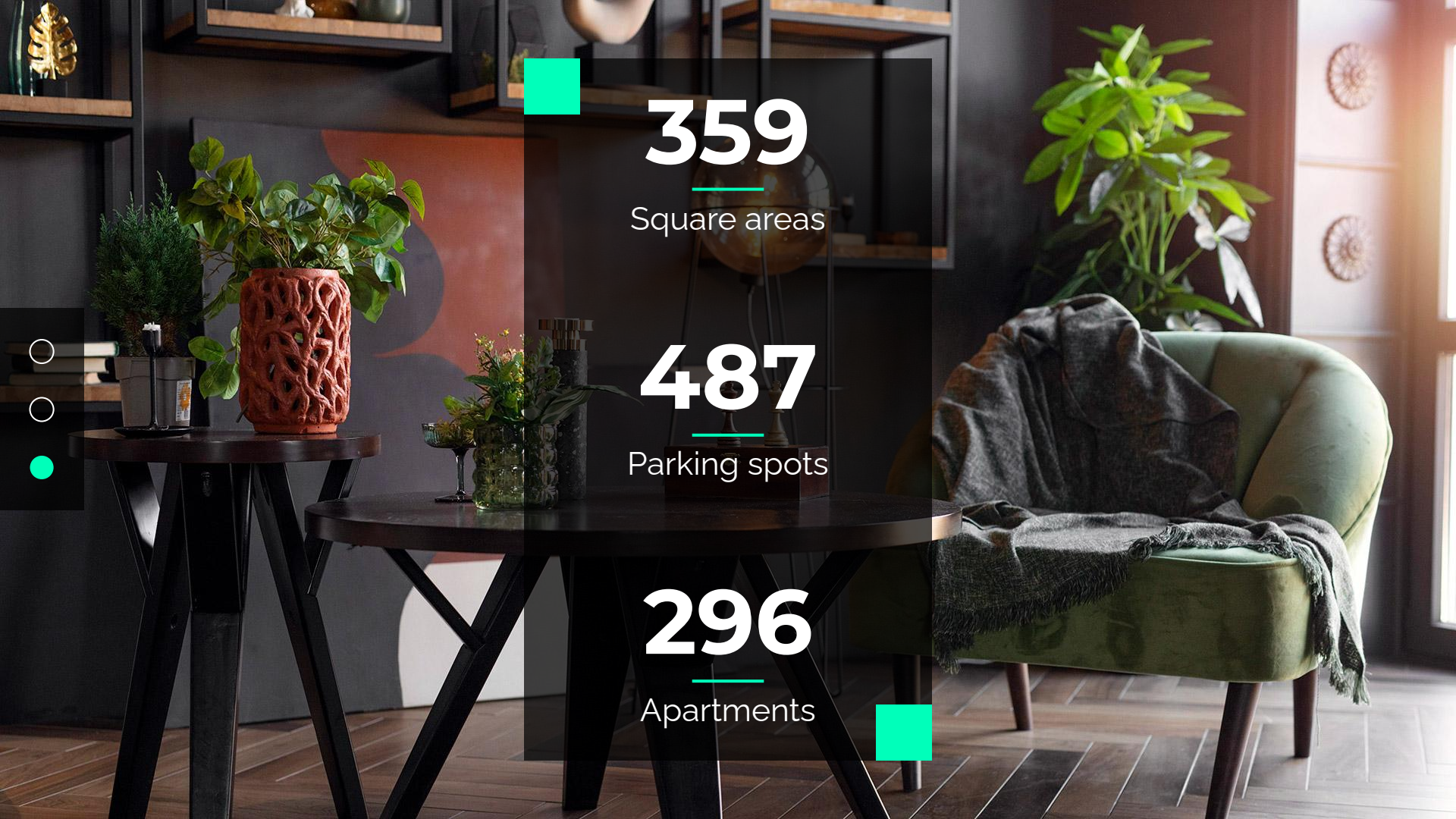
Saturn

Saturn is a gas giant and has rings

Jupiter

Jupiter is the biggest planet of them all


$350,000
Price of the house



359

Square areas

487

Parking spots

296

Apartments

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

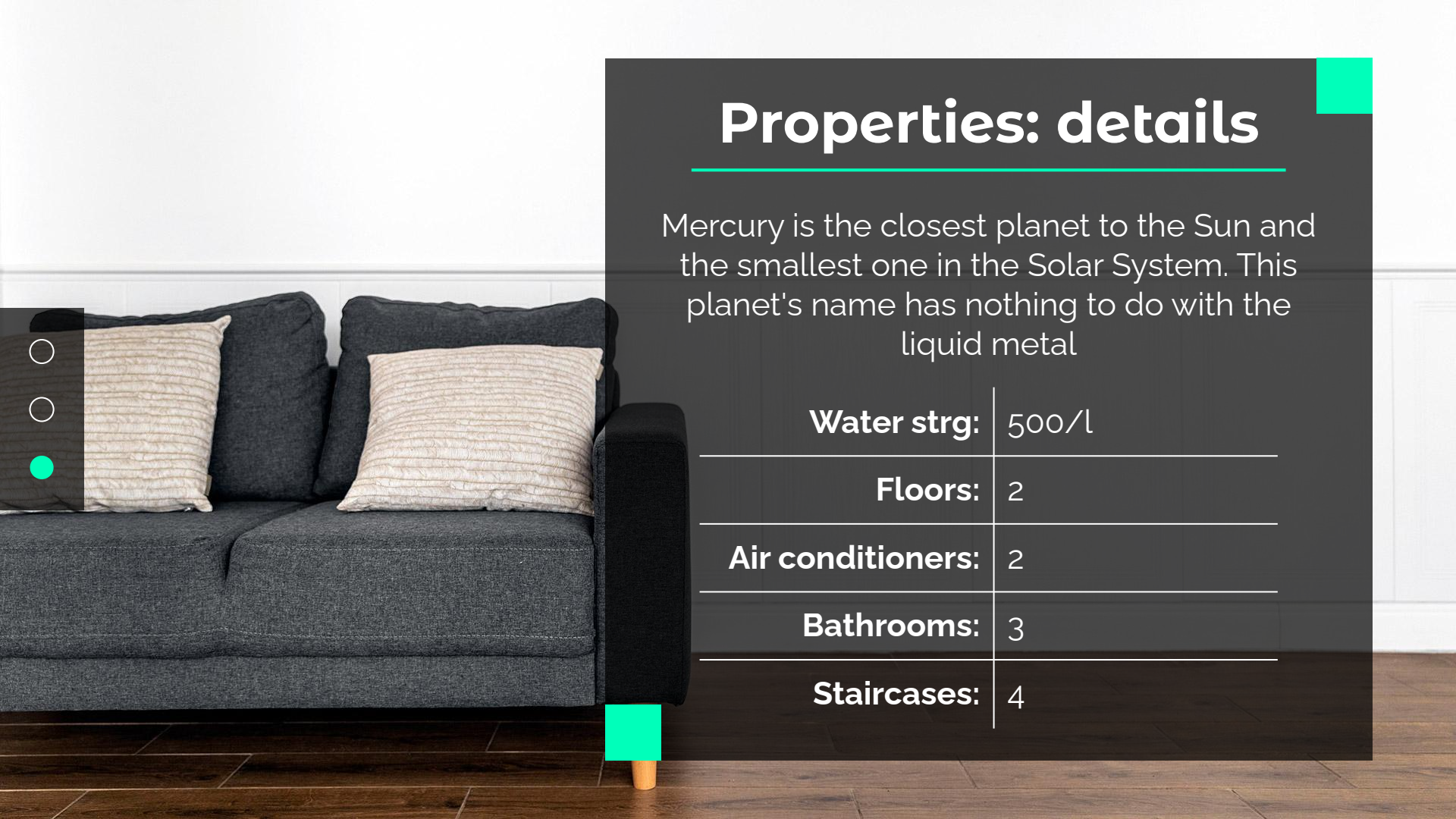
Jupiter is the biggest planet

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

01 **Jupiter**

Jupiter is a big planet

17 **Neptune**

It's far away from us

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			

Urban style

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

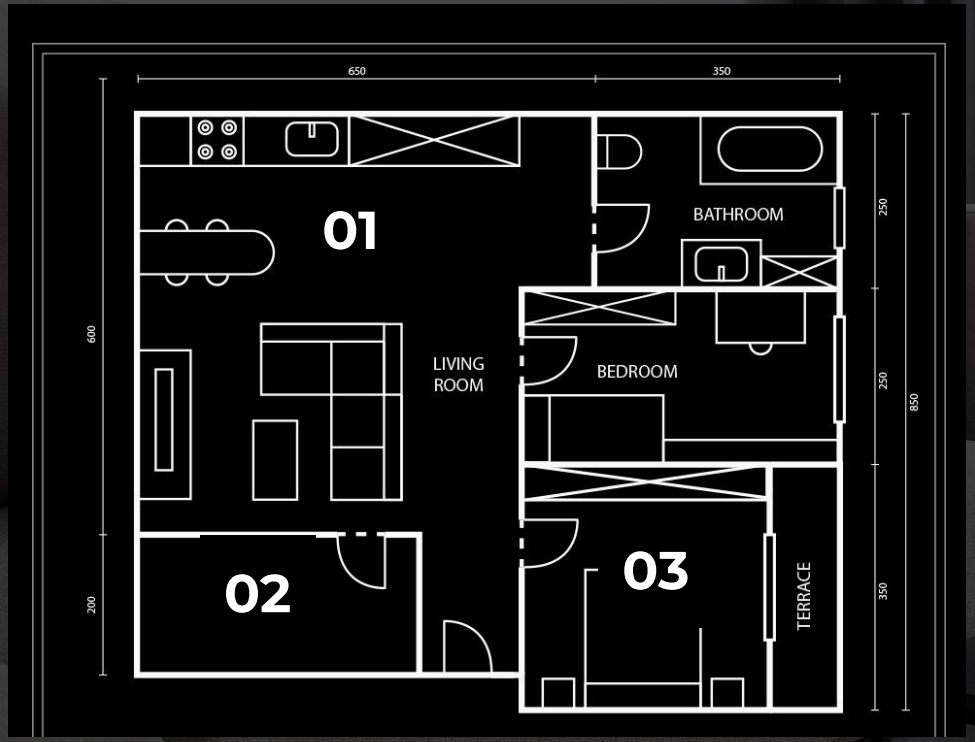
Jupiter

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

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- 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

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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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- 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

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

Icons:

- Real assets icon pack

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Storyset

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Pana

Amico

Bro

Rafiki

Cuate

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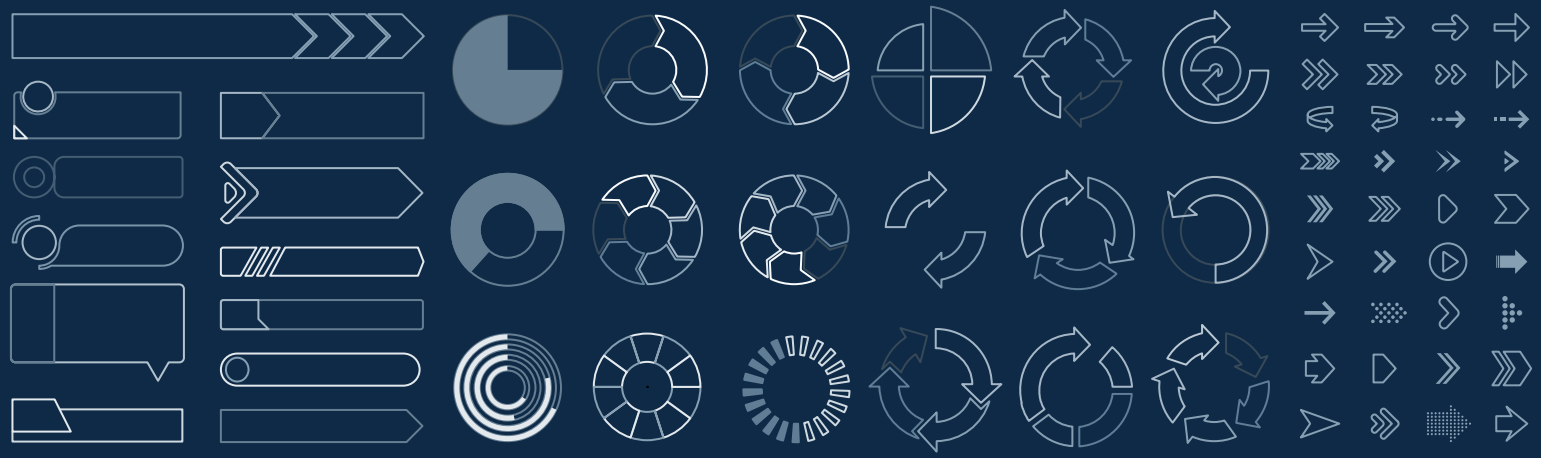

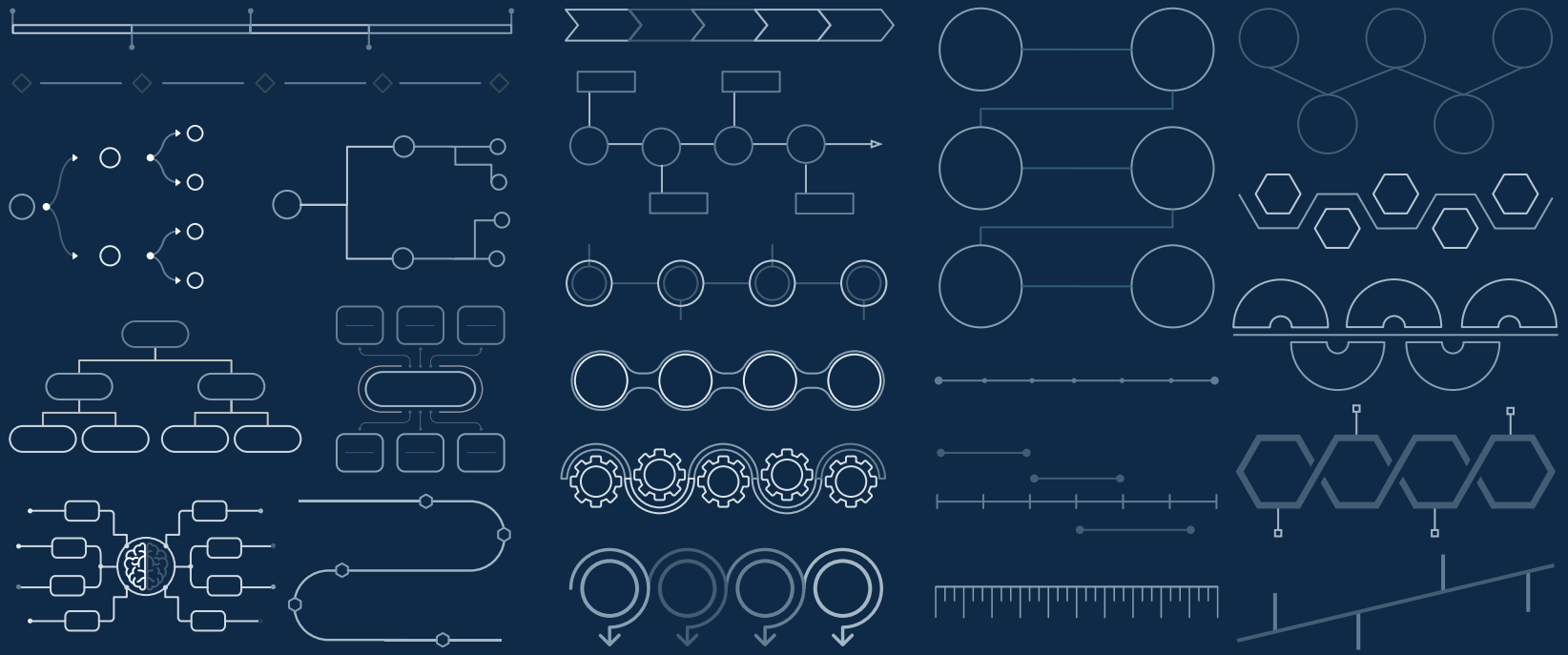

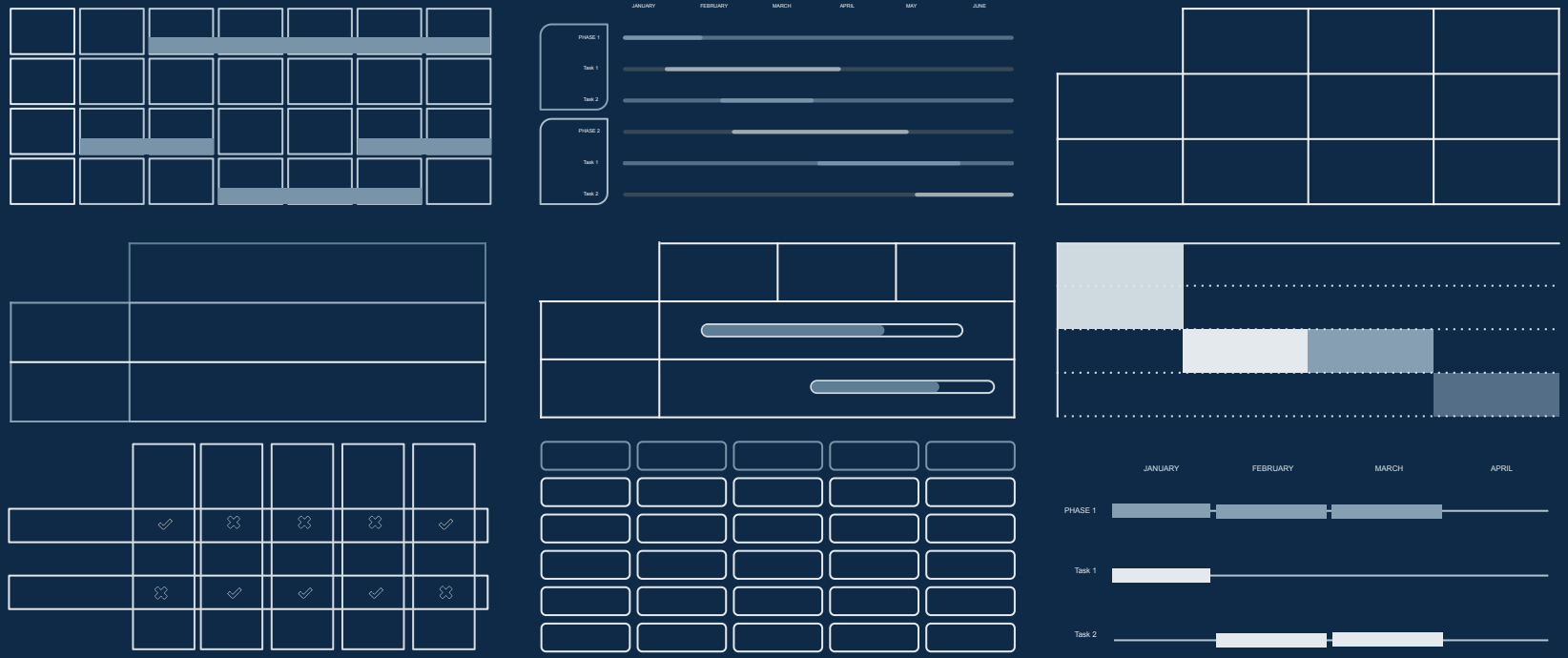
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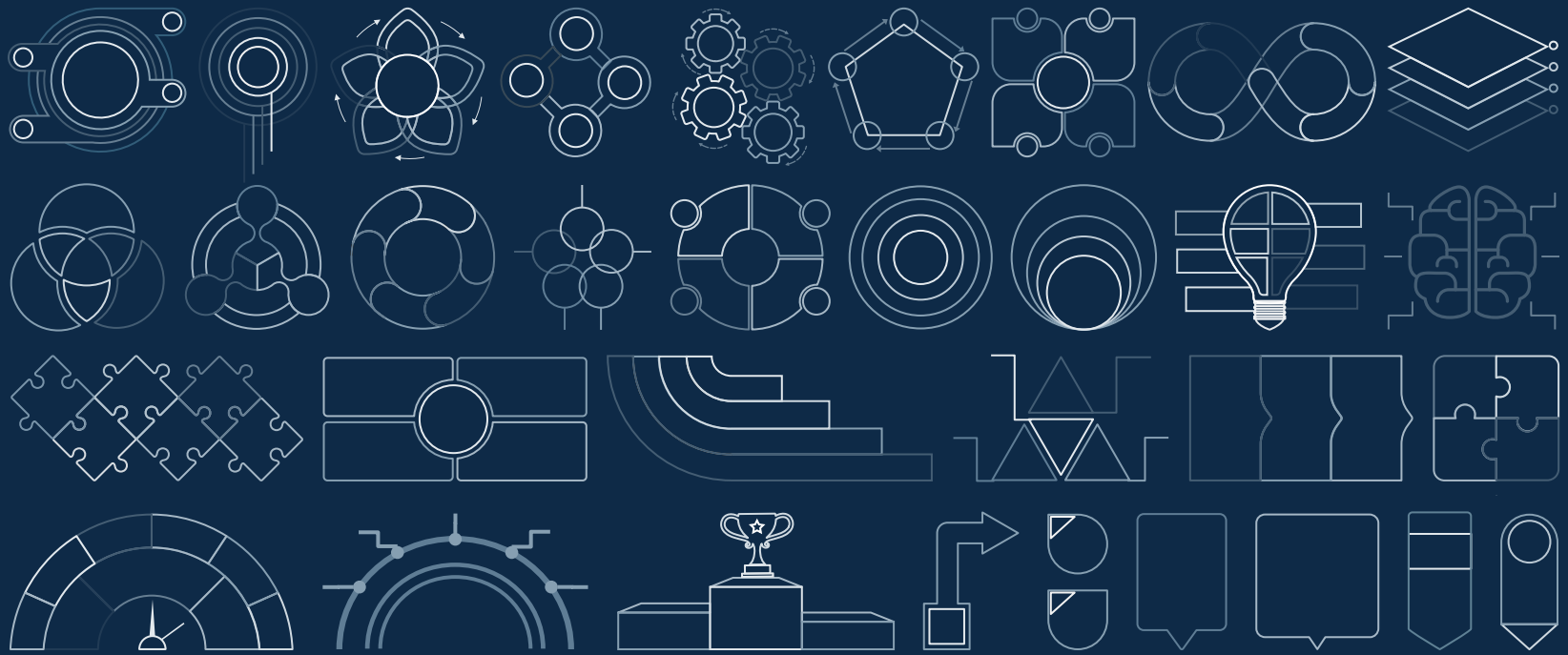
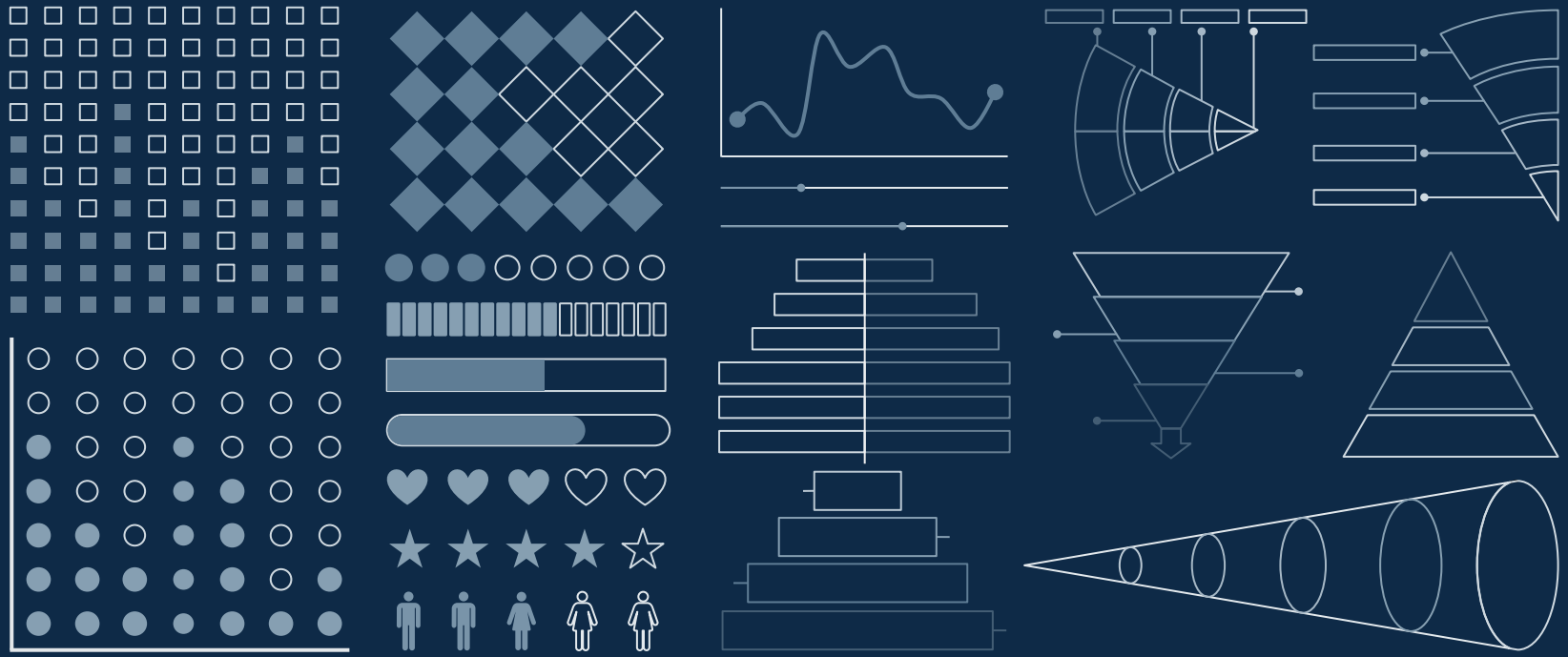
FEBRUARY
MARCH
APRIL
MAY
JUNE
PHASE 1
Task 1
Task 2
PHASE 2
Task 1
Task 2
JANUARY
FEBRUARY
MARCH
APRIL
PHASE 1
Task 1
Task 2





...and our sets of editable icons

You can resize these icons without losing quality.
You can change the stroke and fill color; just select the icon and click on the paint bucket/pen.
In Google Slides, you can also use Flaticon's extension, allowing you to customize and add even more icons.

Educational Icons

Medical Icons

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