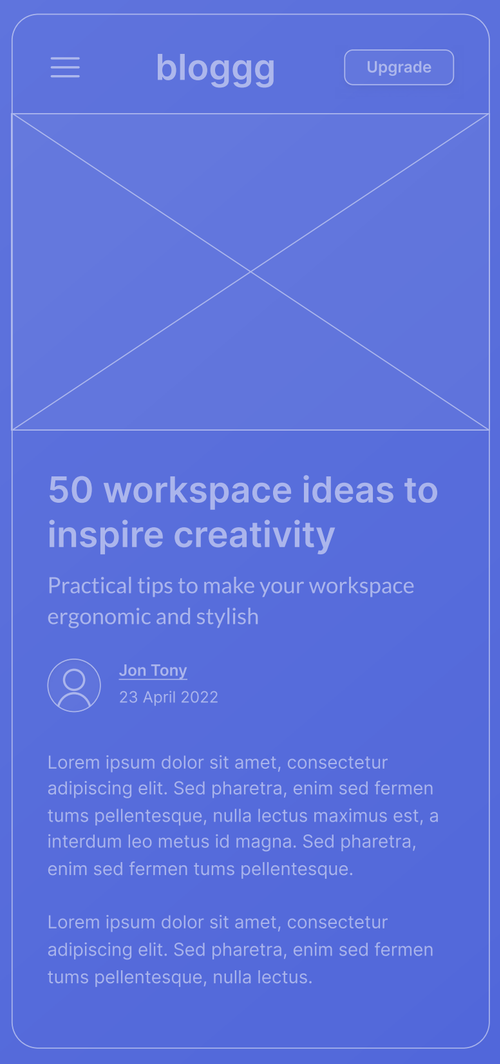
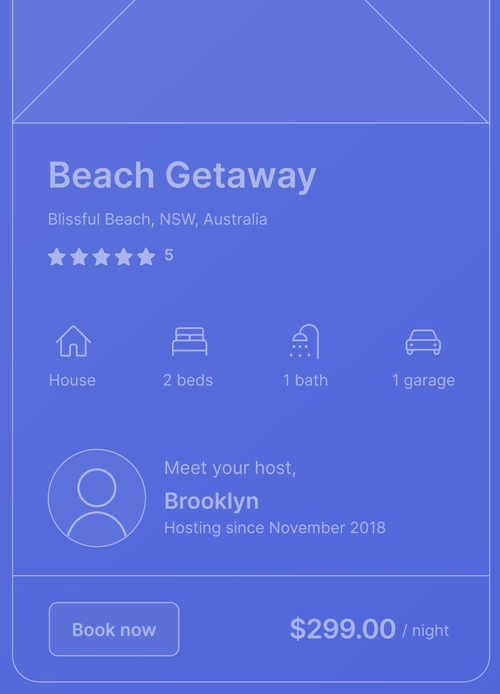
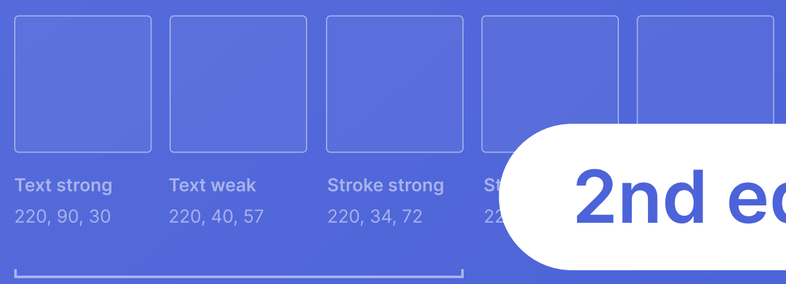


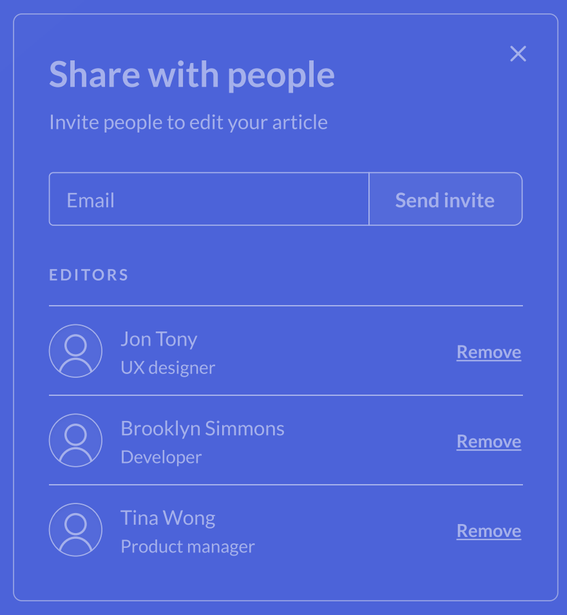


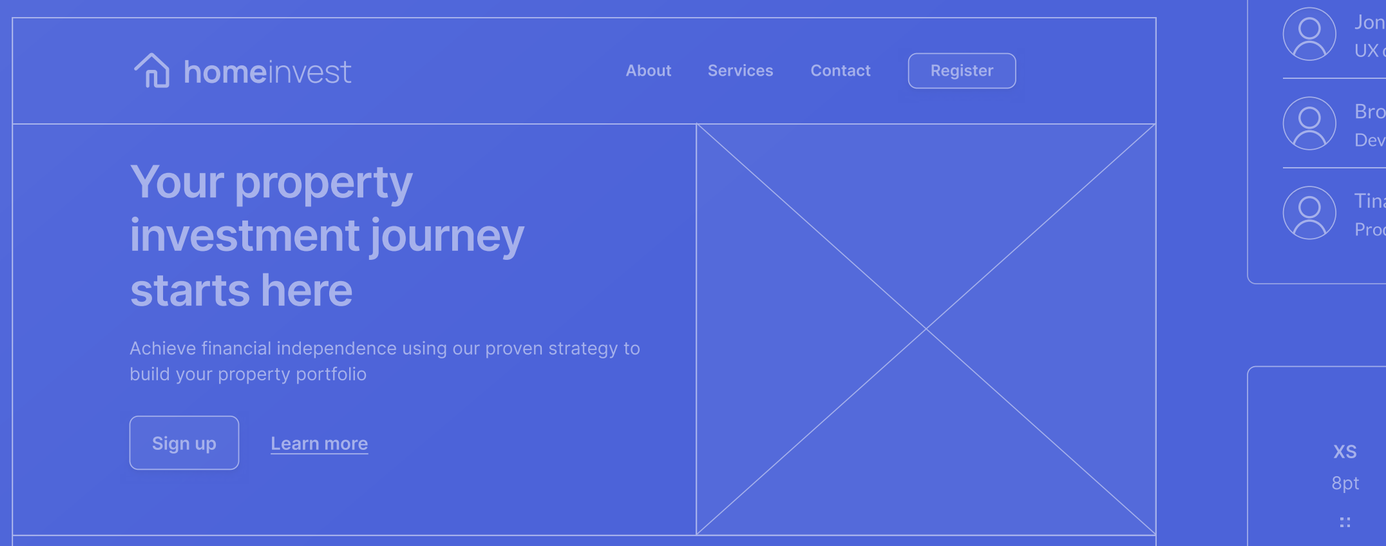


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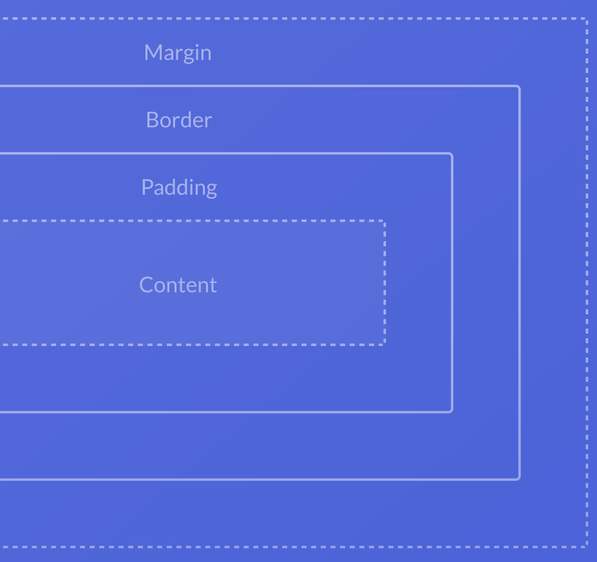


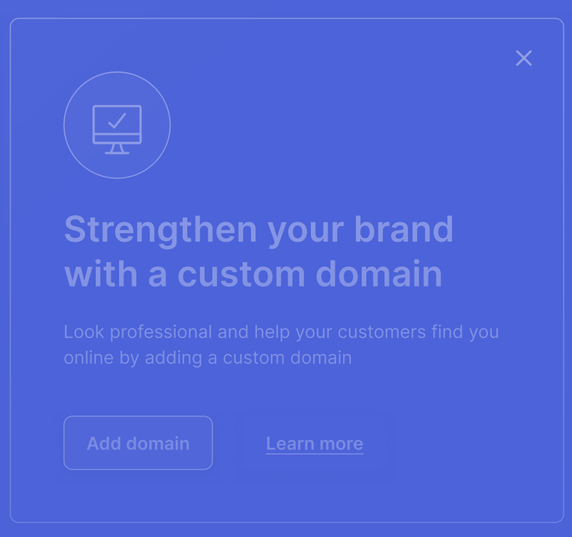




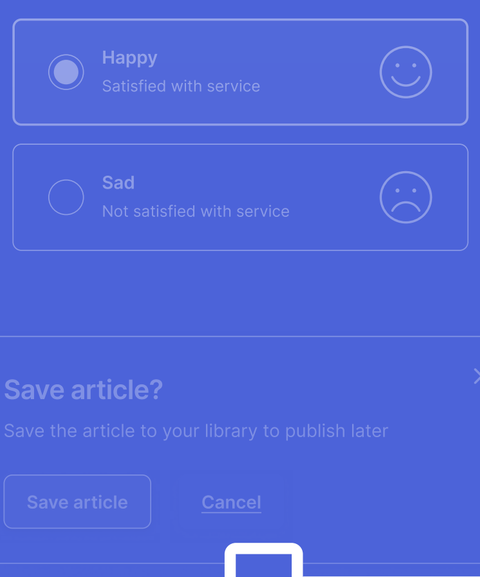


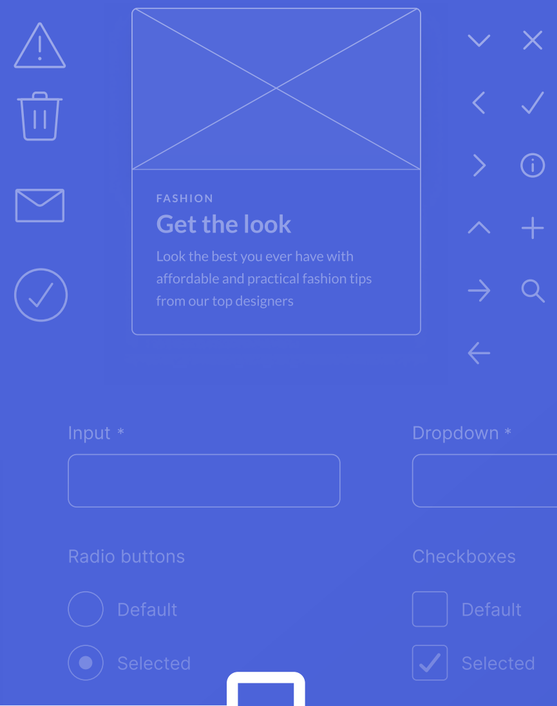














Practical UI

Quick and practical UI design guidelines to design intuitive, accessible, and beautiful interfaces.



Adham Dannaway

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2nd edition

Practical UI

Quick and practical UI design guidelines to design intuitive, accessible, and beautiful interfaces.

Written and designed by Adham Dannaway

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Introduction

A brief breakdown of what to expect in the book to ensure you get the most out of it

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Hi, I’m Adham

I’m a product designer from sunny Sydney, Australia, specialising in UI design and design systems. Since 2005, I’ve enjoyed working in startups, agencies, corporations, and government. I’ve led projects to design products used by millions of people.

I’ve been fortunate to have my work featured in books, magazines, and websites around the world. I love design and enjoy sharing what I’ve learned with others. This book has been a labour of love and I've spent thousands of hours creating it. I hope you find it helpful.

www.adhamdannaway.com



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UI design doesn’t have to be so hard

Interface design is hard. Having endless design possibilities sounds great in theory, but in practice, it can be frustrating and time consuming. With so many options to choose from regarding layout, spacing, typography, and colour, making design decisions can be overwhelming. When you add usability, accessibility, and psychology to the mix, it gets even harder.

Luckily, UI design doesn’t have to be so hard. Over the years, I’ve realised that most of my UI design decisions are governed by a system of logical guidelines. Not artistic flair or magical intuition, just simple guidelines.

Sure, artistic talent helps, but a lot of what makes up an intuitive, accessible, and beautiful interface design can be learned. Having a system of logical guidelines helps you efficiently make informed design decisions. Without a logical system, you’re just using gut feeling to move stuff around until it looks pretty.

I wish I knew these guidelines when I first started out. They're a culmination of nearly 2 decades working as a product designer on websites and apps used by millions of people. My hope is that they’ll help you gain years of experience in a matter of hours.

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UI versus UX

The focus of this book is user interface (UI) design, which is made up of visual and interaction design. What a product looks like and how it works. UI design is a large part of user experience (UX) design.

You'll learn how to design the interface that people interact with when they use a digital product. The actual pixels on a screen that make up a website or app. What it looks like, how it works, and why it works that way.

There are lots of different types of digital interfaces, but this book mostly concentrates on web and mobile applications. That being said, the guidelines are universal and also apply to marketing websites, e-commerce websites, software applications, and more.

Only what you need to know

There’s an overwhelming amount of design tips, videos, books, and articles out there. You can spend a lot of time and money and end up even more confused. Much UI design theory is high-level, impractical, and unnecessary.

I kept this book as concise and practical as possible to help you quickly cut through the noise. It contains the most important things you need to know about interface design, usability, and accessibility. A picture is worth a thousand words, so I designed hundreds of visual examples to help demonstrate concepts clearly and quickly.

There's a lot of UI design information out there, but you don't need to know it all. I focussed on the 20% of knowledge that brings 80% of the results.

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How were these guidelines validated?

Most of the guidelines in this book are based on conventional best practices. They've been tried, tested, and documented over many years by hundreds of designers around the world.

Many of the guidelines are based on how our bodies work. How our eyes perceive things, how our brains interpret them, and how we interact with a user interface.

There are, of course, certain topics that have conflicting evidence and opinions. In these cases, I've looked at the evidence, weighed it up against my own professional experience, and provided my opinion and rationale.

These guidelines should help you avoid most usability issues, but I'd encourage you to conduct your own usability testing to further validate design concepts.

Got feedback?

I don't claim to know it all. In fact, it's quite the opposite. The more I learn, the more I realise how much I have yet to learn. I'm always open to hearing different ideas or having my ideas constructively challenged. That's how we learn and grow as designers.

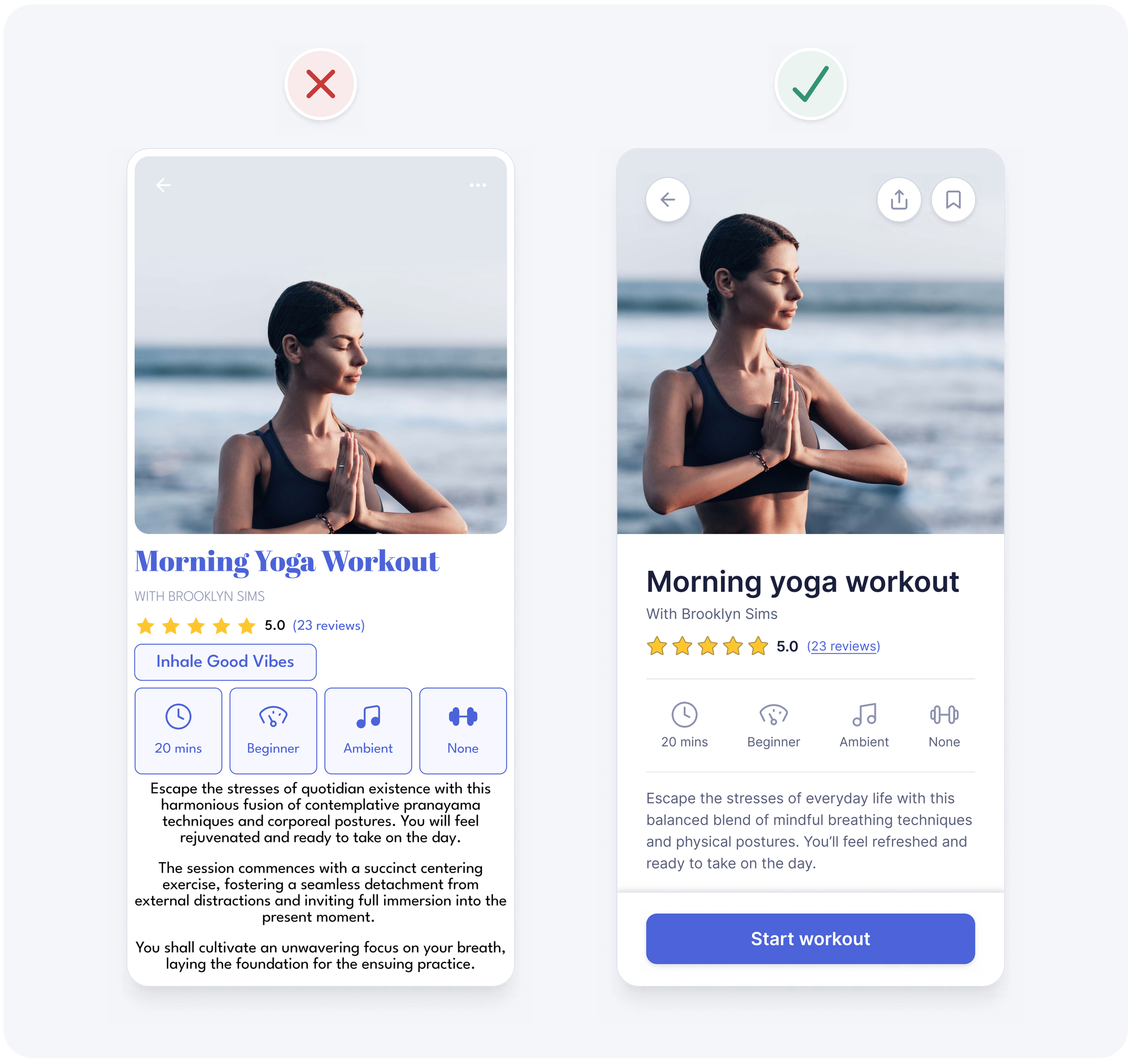
I'd love for this book to grow and improve over time, so let me know if you have any thoughts or feedback at hi@adhamdannaway.com

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A tutorial to apply what you've learned

The best way to learn is by doing. At the end of each chapter, you'll practice your new skills by doing a quick tutorial. You'll apply what you've learned by improving the following example. It's an interface for a workout in a fictional fitness app and it's full of common design problems.

By the end of the book, you'll have fixed the problems and created an intuitive, accessible, and beautiful design. All simply by applying some of the guidelines from the book.



Before and after of the fitness app example you'll be working on

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Your progress

Let’s get started

1. Fundamentals
2. Less is more
3. Colour
4. Layout and spacing
5. Typography
6. Copywriting
7. Buttons
8. Forms

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CHAPTER 1

Fundamentals

Overarching UI design principles that form the foundation of the guidelines

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Minimise usability risks

While it might not sound very fun or creative, I base many of my design decisions on risk. The risk that someone could have difficulty using an interface. For example:

- Thin, light grey text can look sleek and trendy, but there's a risk that some may find it difficult to read.
- Icons without labels can look clean and minimal, but there's a risk that some might not understand what the icons mean. This risk is greater for those with cognitive and vision impairments.
- It might look nice to add colour to heading text, but there's a risk that some could mistake it for a link.

Usability testing should highlight large risks, but smaller ones could go unnoticed. It depends on the diversity of users you test with and the effectiveness of the testing. Most of the time you don't know the different types of people that will be using your product, so it's safest to cater to as diverse a range as possible.

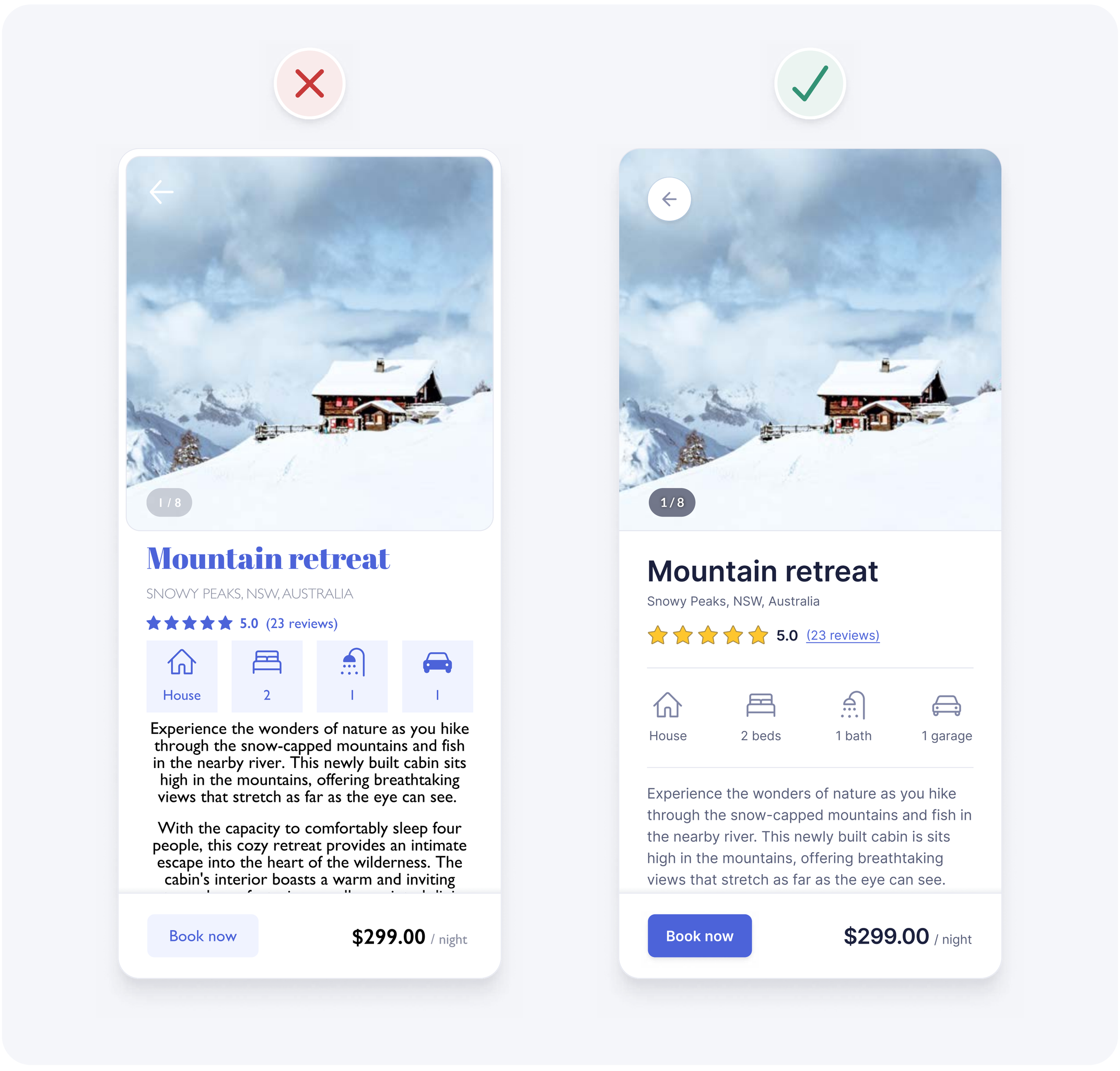
Consider people with poor eyesight, low computer literacy, reduced dexterity and cognitive ability. Make sure that your designs meet Web Content Accessibility Guidelines (WCAG).

These guidelines are a good benchmark for website accessibility. Aim to at least meet WCAG 2.1 level AA requirements. This is the medium level of conformance and a good place to start. You'll learn the accessibility guidelines you need to know throughout the book.

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Keep an eye out for potential usability risks. If there's anything that's slightly vague, confusing or unclear, simplify it to make it crystal clear before investing time and money in usability testing. I'll refer to usability risks often throughout this book to help you see risks that you may not have been aware of. I'll also provide practical advice to decrease usability risks.

The following example contains the 3 usability risks mentioned previously (low contrast text, icons without labels, and blue heading text) along with a bunch of others. You'll learn logical guidelines throughout the book to help you fix usability risks like these.



Fixing usability risks in a holiday house booking interface

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Have a logical reason for every design detail

The importance of UI design is often trivialised as being nothing more than making an interface look pretty. I think this demonstrates an ignorance of the logic behind UI design. Sure, some elements are purely decorative, but if an interface is designed well, every detail will have a logical reason behind it that improves usability.

I’m not saying that aesthetics aren’t important, but UI design is about so much more than how it looks. It’s about how it works and why it works that way. When designing an interface, you’re literally designing the user’s experience.

Designing interfaces using objective logic, rather than subjective opinion, makes it faster and easier to make design decisions. It also helps you support your decisions in discussions and provide constructive feedback to other designers. “That looks nice” or “I don’t like it” are just subjective opinions, not logical or constructive feedback.

It’s important to have a rationale (logical reason) behind each design decision you make and to be able to clearly articulate it to support your designs. Every guideline in this book includes a rationale to help you understand the why behind the UI.

Let’s look at the rationale behind a well designed row of text blocks with icons. It may look simple, but it was carefully designed using many logical guidelines.

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Website builder

With access to over 100 beautifully designed website templates, your site will be up and running in no time.

Explore templates



Email marketing

Launch professionally branded email campaigns in minutes and monitor engagement with powerful analytics.

Email marketing features



Affiliate program

Empower your business by creating your own affiliate program and turning your customers into a sales team.

How affiliates work

Here are some of the logical reasons behind this design, which you'll learn about throughout the book:

- Icons and text are left aligned to create a neat left edge. This improves readability and aesthetics while decreasing cognitive load.
- Headings and text links are descriptive so they're scannable and can be read out of context by screen readers.
- Secondary text is less important than headings, so it's made less prominent (using size and contrast) to create a clear visual hierarchy.
- Secondary text line height is at least 1.5 to improve readability.
- Text links are coloured blue to indicate they're interactive and underlined so the colour blind can distinguish them from other text.
- Spacing inside each block is less than the spacing between each block to create groups of related information. Spacing is based on a set of predefined spacing options to improve consistency.
- Information is broken up into smaller groups to make it easier to understand and to help speed up decision making.
- Colours are based on an accessible monochromatic colour palette with rules that govern its usage.

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Minimise interaction cost

Interaction cost is the sum of physical and mental effort required to achieve a task. Looking, scrolling, searching, reading, clicking, waiting, typing, thinking, and remembering all add to interaction cost. The higher the interaction cost, the harder it is for someone to achieve their task.

The great thing about interaction cost is that you can measure it. This means you can try to minimise it to make it easier for people to achieve their goals.

Of course, the more features a product provides, the harder it is to keep interaction costs down. This is one of the reasons why simple apps that focus on doing a specific task efficiently, are often the most successful.

How to minimise interaction cost

Many of the guidelines in this book help to minimise interaction cost, but here are 3 of the most effective:

1. Keep related actions close

According to Fitts's Law, the closer and larger a target, the faster it is to click on that target. Keep actions close to the element they relate to and try to ensure they have a sufficient target area (at least 48pt by 48pt is a safe size). You'll learn about points (pt) in the "Layout and spacing" chapter.

2. Reduce distractions

Attention grabbing distractions like animated banners, pop-ups, and unnecessary visuals, can pull people's attention away from the task they're trying to complete.

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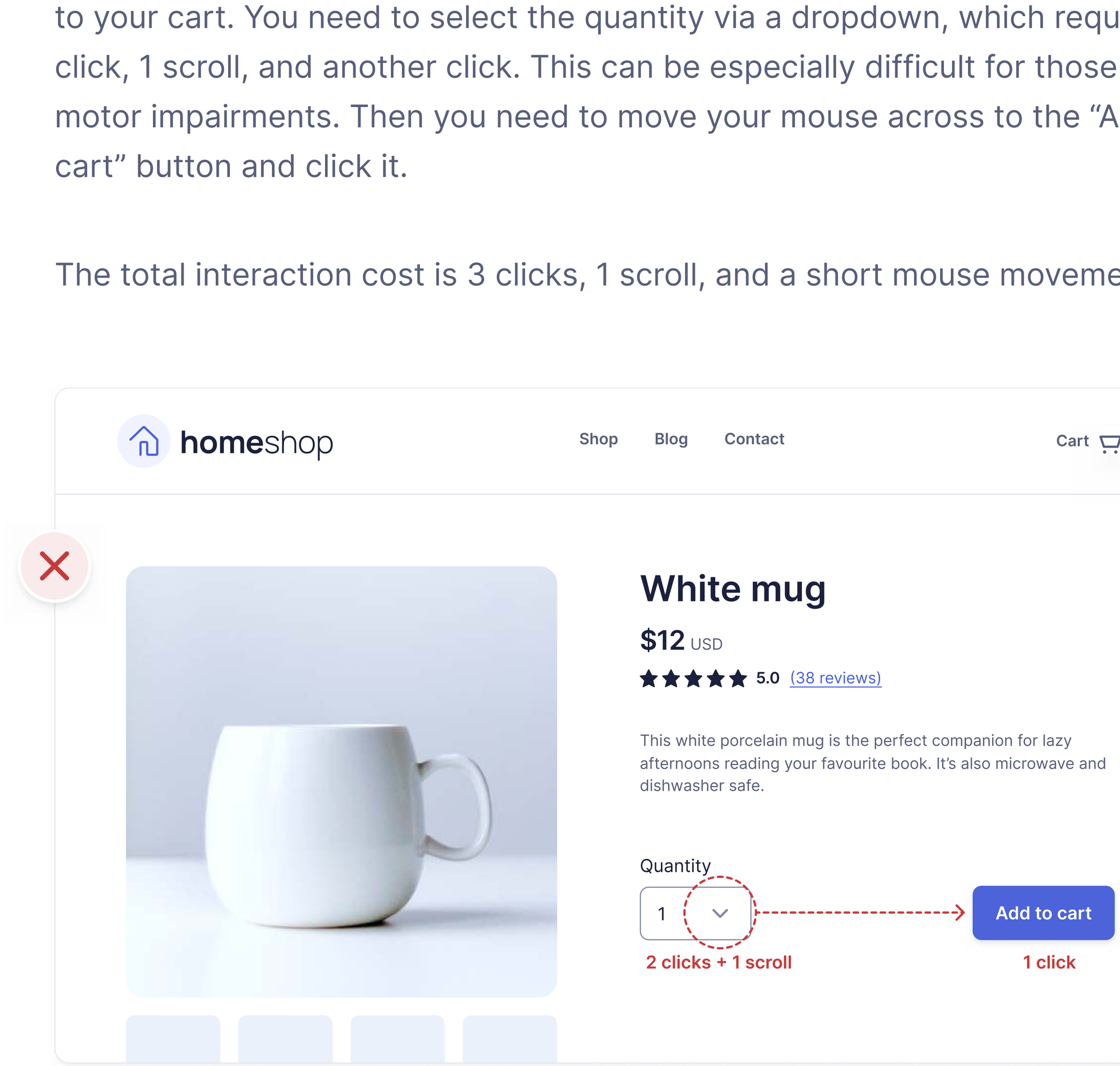
3. Minimise choice

According to Hick’s Law, the time it takes to make a decision increases with the number and complexity of choices. Reduce choices to speed up decisions. You can also highlight a smaller set of recommended or popular items to help people make decisions faster.

An interaction cost example

In the following product page example, let’s say you want to add 2 products to your cart. You need to select the quantity via a dropdown, which requires 1 click, 1 scroll, and another click. This can be especially difficult for those with motor impairments. Then you need to move your mouse across to the “Add to cart” button and click it.

The total interaction cost is 3 clicks, 1 scroll, and a short mouse movement.



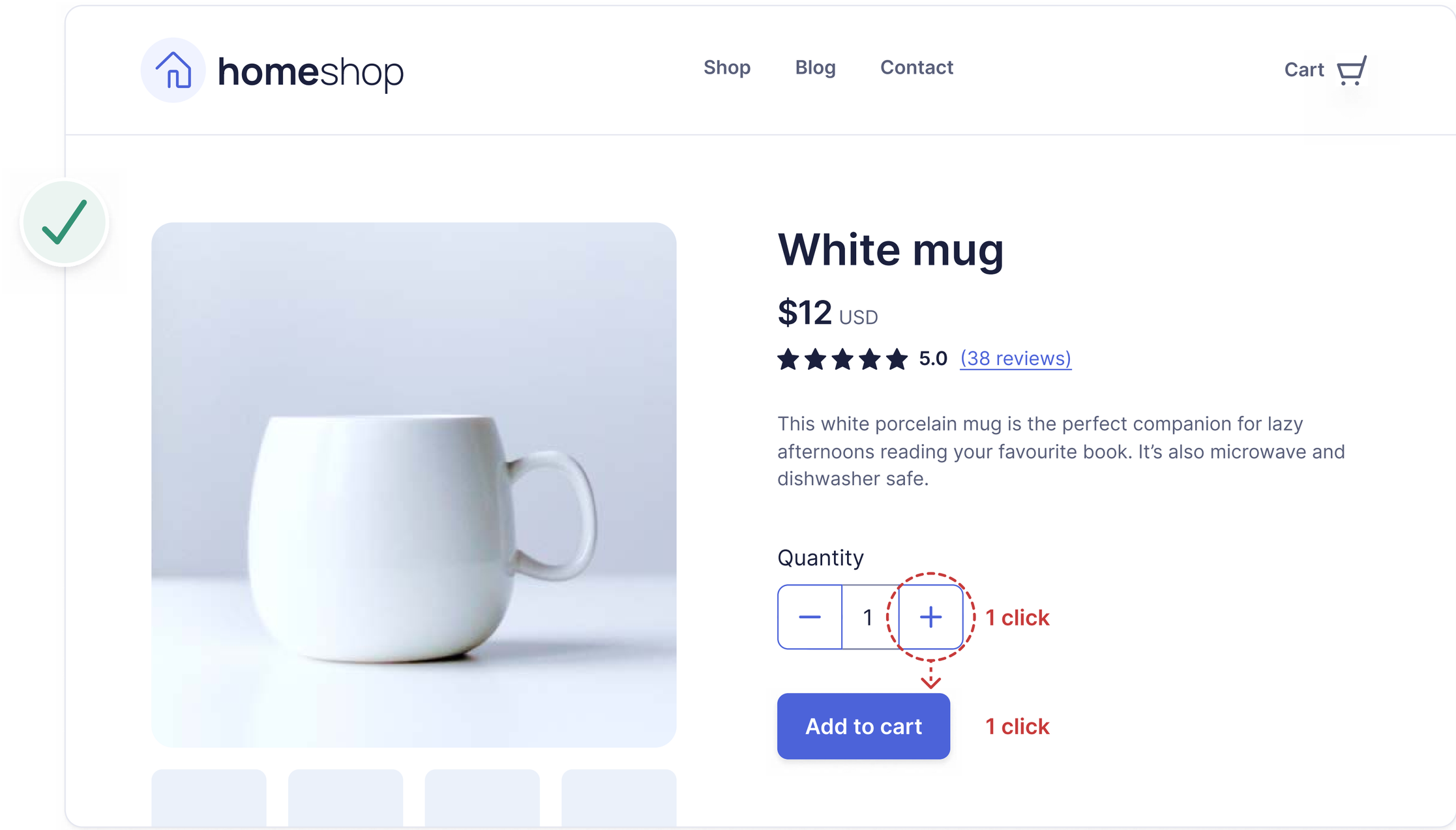
Total interaction cost is 3 clicks, a scroll, and a short mouse movement.

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In the next example, we reduce the interaction cost using a stepper for the quantity instead of a dropdown. A stepper component makes it easier and faster for people to make small numeric changes. It allows people to increase or decrease a number with a single button press or by typing the number in the field.

We move the “Add to cart” button closer to the quantity selector to further reduce interaction cost. Left aligning the button also helps ensure the button won’t be missed by those using screen magnifiers.

We reduced the total interaction cost to 2 clicks and a very small mouse movement. A similar approach can be taken to reduce the interaction cost on any interface.



Total interaction cost is just 2 clicks and a very small mouse movement

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Minimise cognitive load

Cognitive load is the amount of brain power required to use an interface. The goal is to minimise cognitive load to make your interface as easy to use as possible. This frees up mental resources for people to focus on the task they're trying to achieve.

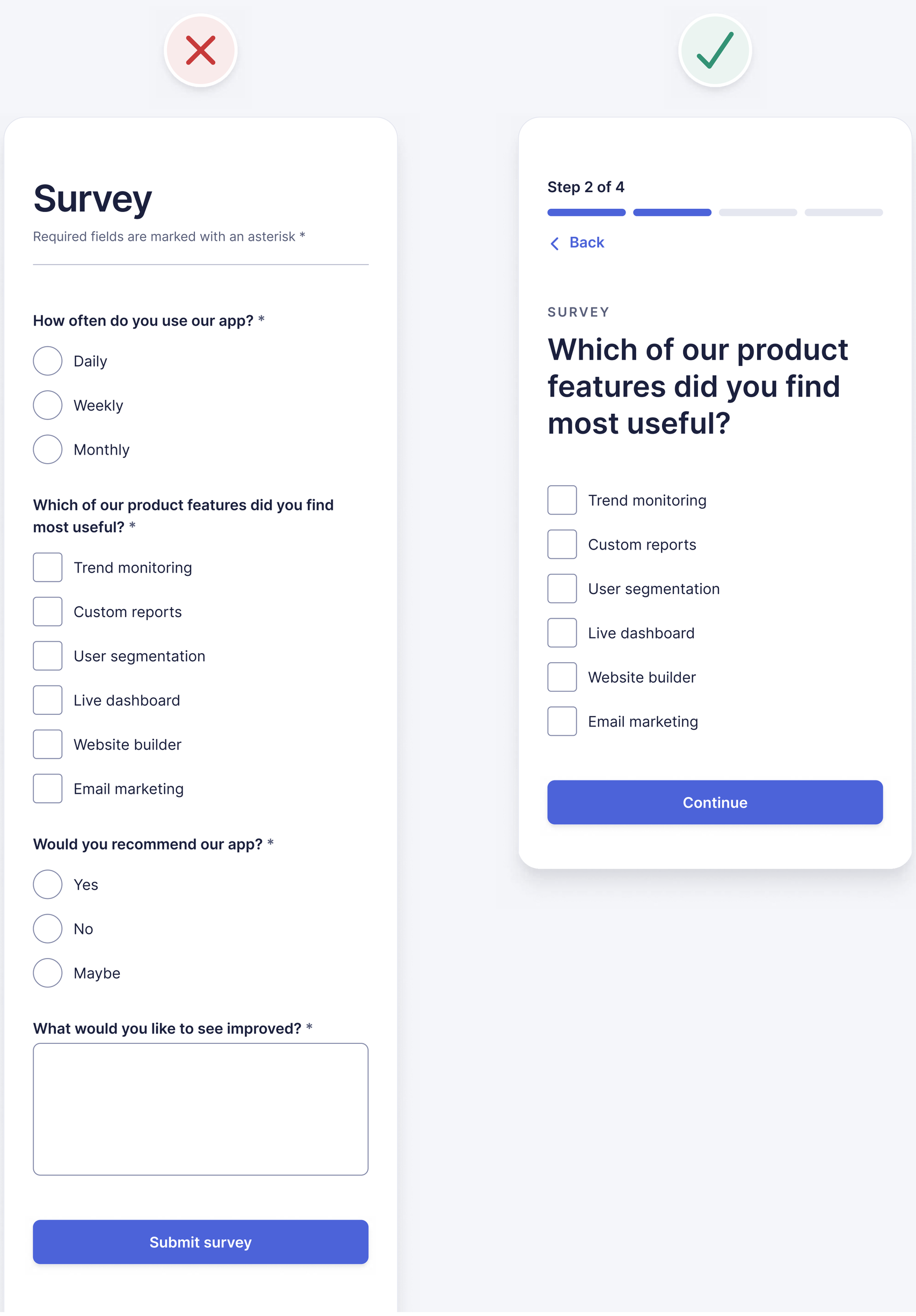
Quick ways to reduce unnecessary cognitive load:

- Removing unnecessary styles, information, and decisions to reduce distractions.
- Breaking up information into smaller groups to clearly show relationships and speed up decision making.
- Using conventional design patterns that people are familiar with.
- Maintaining consistency by ensuring that similar elements look and work in a similar way.
- Creating a clear visual hierarchy to show the level of importance of information.

Many of the guidelines in this book help to reduce cognitive load. It’s an important concept to keep in mind when designing any interface.

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In the following example, cognitive load is reduced by breaking up a large, complex form into smaller, simpler steps. People can get overwhelmed by large, complex problems. Breaking them down into smaller, simpler ones makes them easier to solve.



A large, complex form is broken into smaller, simpler steps to reduce cognitive load.

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Create a design system

Having endless design possibilities sounds great in theory, but in practice, it can be frustrating and time consuming. When designing an interface, there are so many options to choose from regarding layout, spacing, typography, and colour, it can quickly get overwhelming.

That’s why having a system of predefined options and guidelines to help you efficiently make design decisions is crucial. This is known as a design system and you can create one in 3 steps:

1. Set predefined style options
2. Create reusable modules
3. Define usage guidelines

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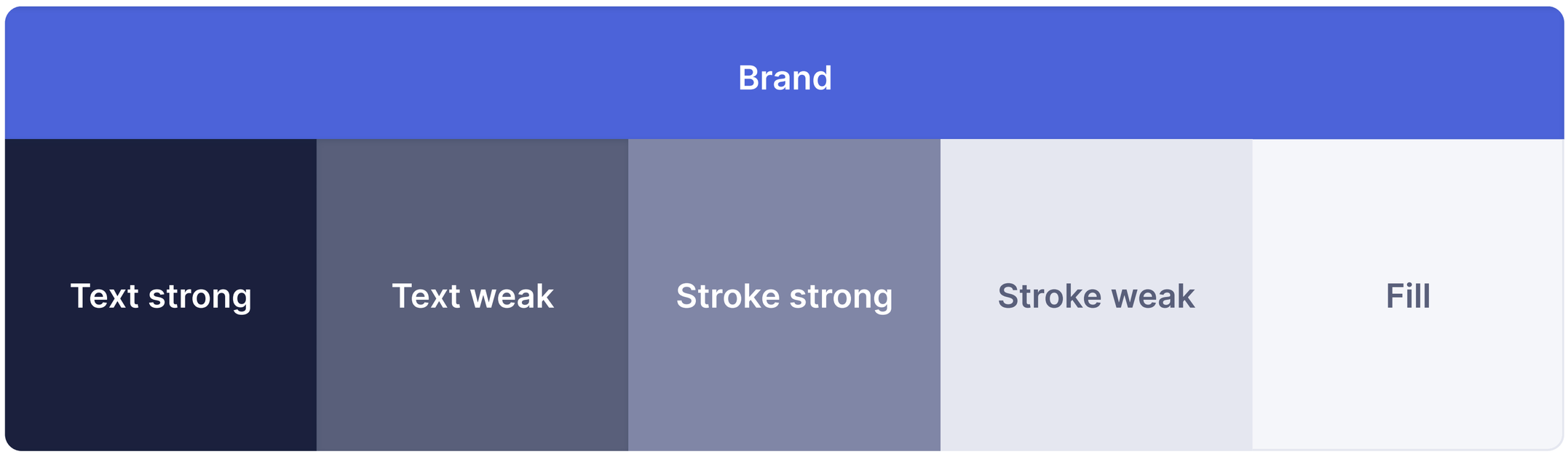
1. Set predefined style options

Rather than choosing from unlimited options for things like colour, typography, and spacing, create a small set of predefined options to choose from. Limiting your options in this way helps improve consistency and speeds up decision making. These predefined reusable options are often referred to as “tokens”.

Colour options

Create a small set of predefined colour options called a colour palette. The following colour palette is made up of variations of the brand colour. Each colour has a purpose to help you quickly decide how and where to use it.

For example, actions like buttons and text links are often assigned the brand colour from the colour palette. Using a consistent colour for interactive elements helps teach people what’s interactive and what’s not.



Similarly, there’s no need to spend countless hours searching for different shades of grey for form input borders, checkbox borders, and radio button borders. Simply assign a colour variation from the colour palette to use for all interface element borders.

You’ll learn how to create simple, powerful, and accessible colour palettes with rules that govern their usage, later in the “Colour” chapter.

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Typography options

Create a small set of predefined typography options for different text types. Define the font sizes, line-heights and weights once and reuse them throughout an interface. I used a set of typography options similar to the following one to create the examples in this book.

You'll learn how to use a type scale to create a set of typography options later in the "Typography" chapter.

TYPE SCALE (1.200)	SIZE	LINE HEIGHT
Heading 1	40px	48px
Heading 2	32px	40px
Heading 3	24px	32px
Heading 4	20px	28px
Small	16px	24px
Tiny	14px	20px

Example of a predefined set of typography options

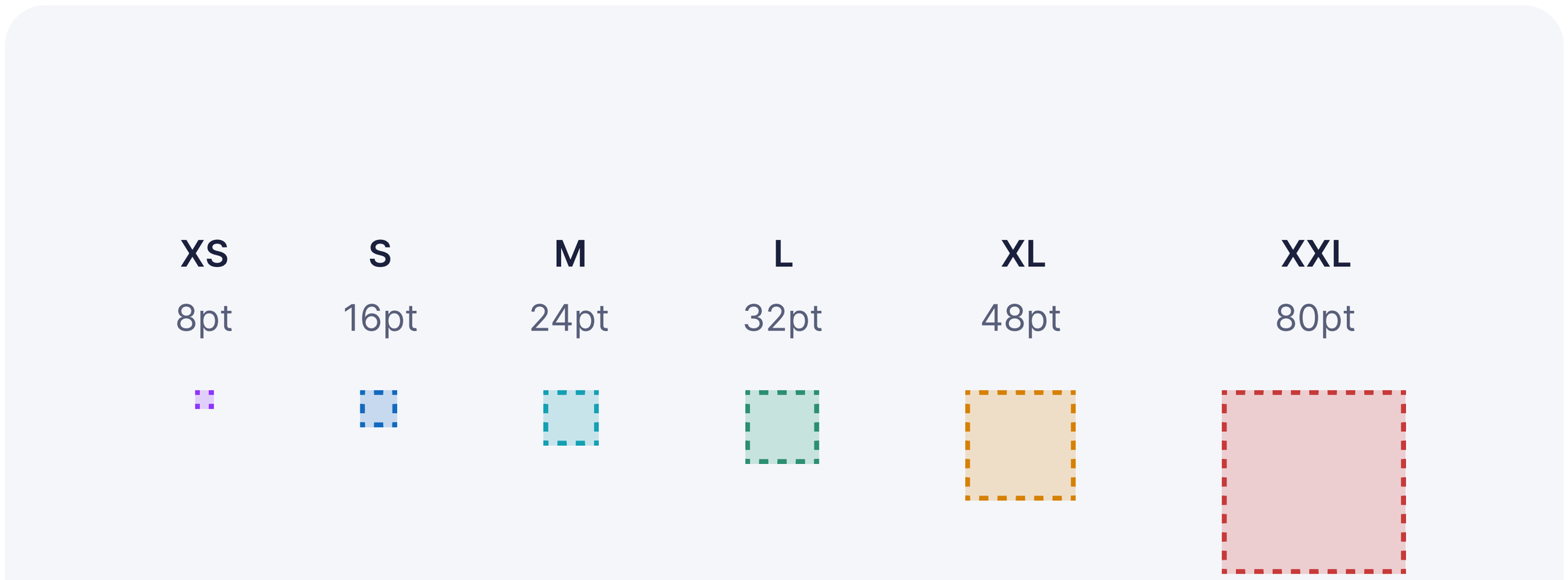
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Spacing options

Deciding on the ideal spacing between interface elements can be a frustrating and time consuming process, as there are so many options to choose from. In my early days as a designer, I remember painstakingly pushing interface elements back and forth, a pixel at a time, until they looked perfect.

Creating a limited set of predefined spacing options (as seen below) can speed up your design process significantly, making you a much more efficient designer. Using consistent spacing options will also result in a neater, simpler interface design that’s faster to build.

You’ll learn how to define a set of spacing options and how to apply them later in the “Layout and spacing” chapter.

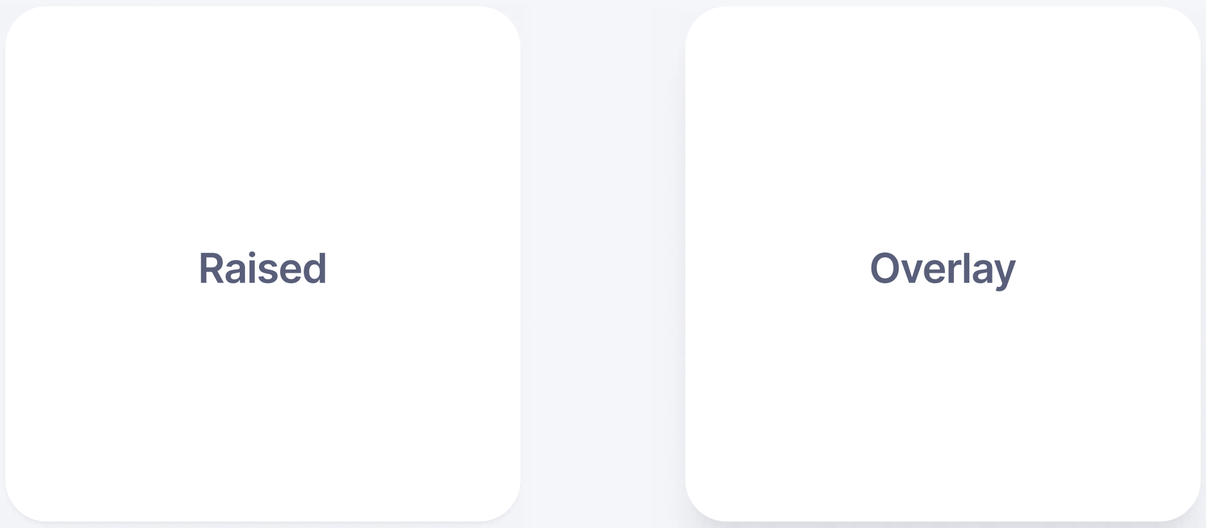


Example of a predefined set of spacing options

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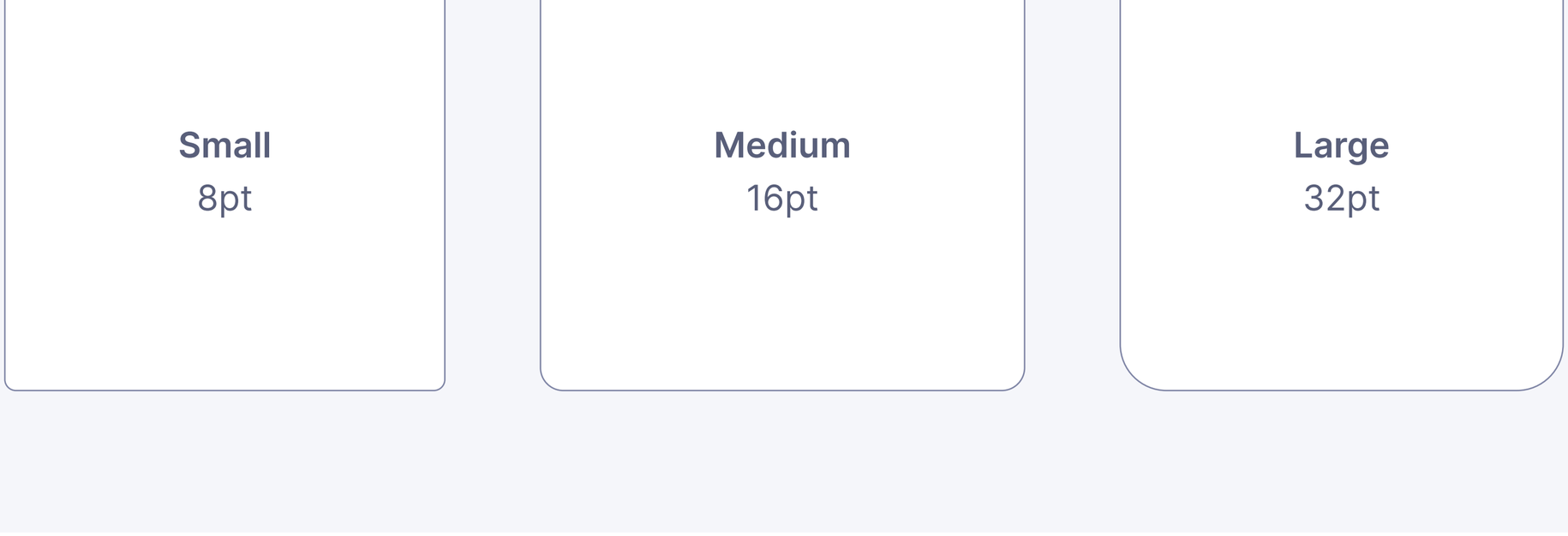
Predefine other style options

Try to create sets of predefined options for any other styles you use too. You'll generally need 2 shadow options (raised and overlay) to indicate the depth of interface elements.



Predefined set of shadow options

Create 3 border radius options (8pt, 16pt, and 32pt) to use on small, medium, and large interface elements respectively.



Predefined set of border radius options

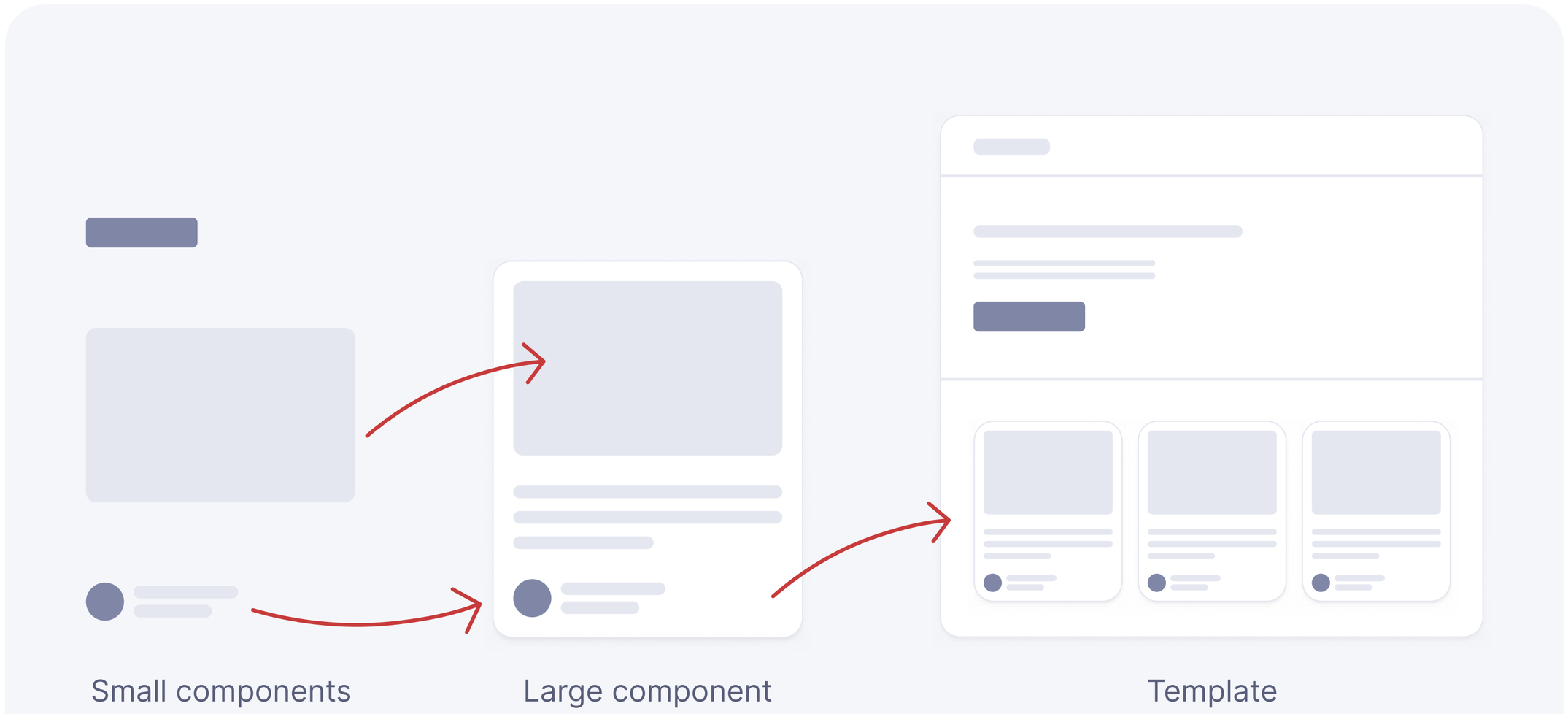
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2. Create reusable modules

Modular design involves breaking things down into smaller, reusable, and replaceable parts called modules or components. Modular design has been used to create cars, machines, buildings, and computers for many years. It's a great way to improve productivity, efficiency and consistency.

Always aim to design interfaces in a modular way by doing the following:

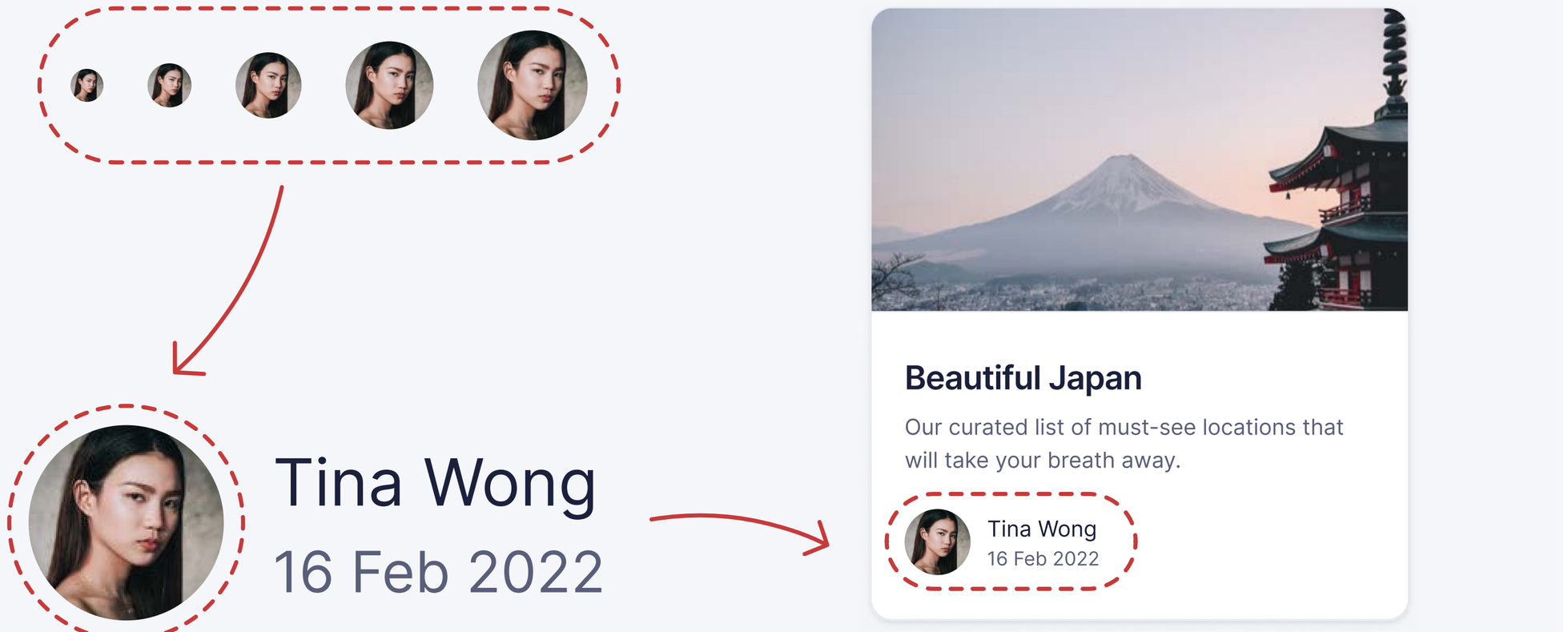
- Start by creating the smallest components such as buttons, avatars, and form input fields. These will be your building blocks.
- Combine small components to create larger, more complex ones.
- Arrange components in specific layouts to create reusable page templates.

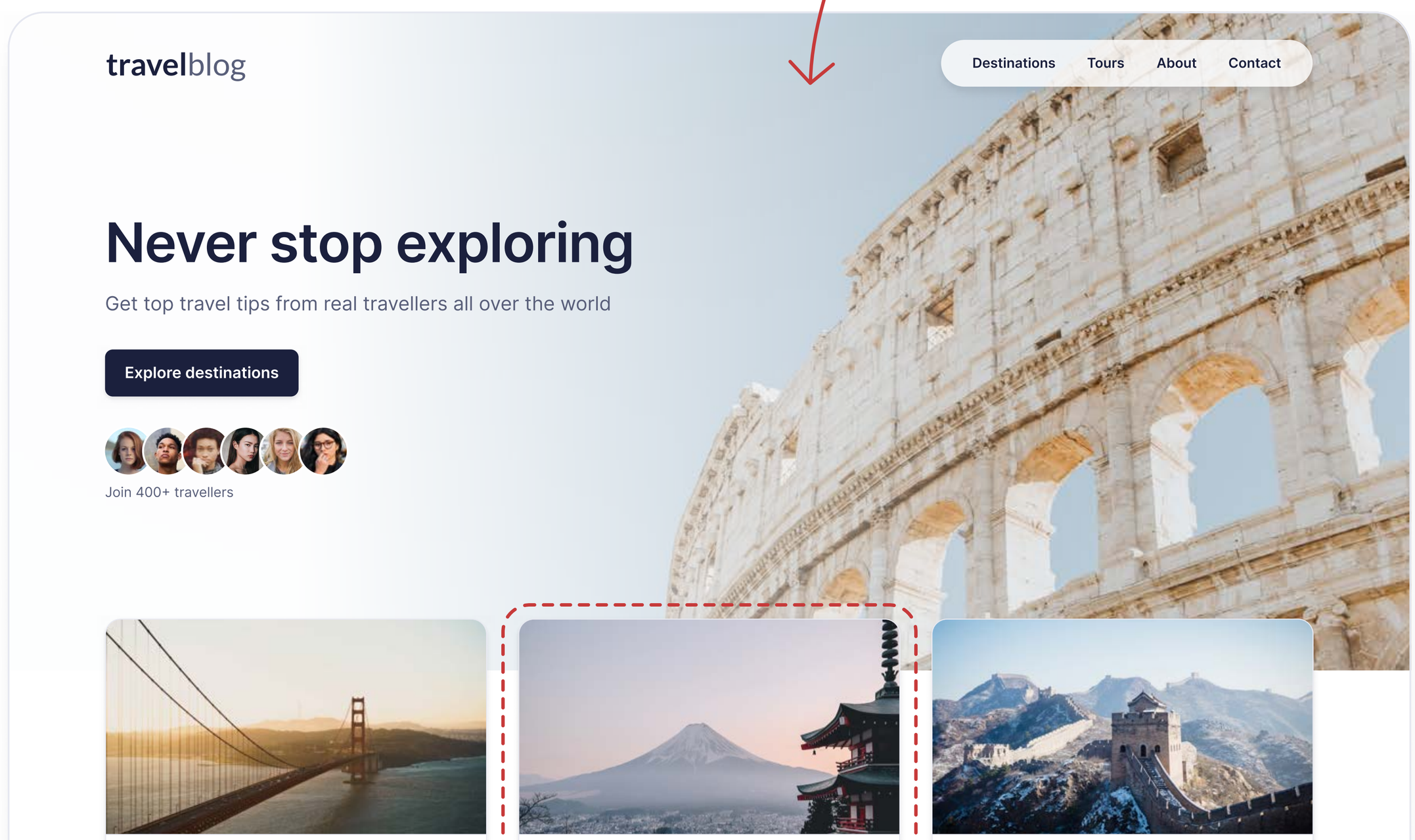


The goal is to create a collection of all components, known as a component library or UI kit. This makes it easy to view, manage, and reuse components.

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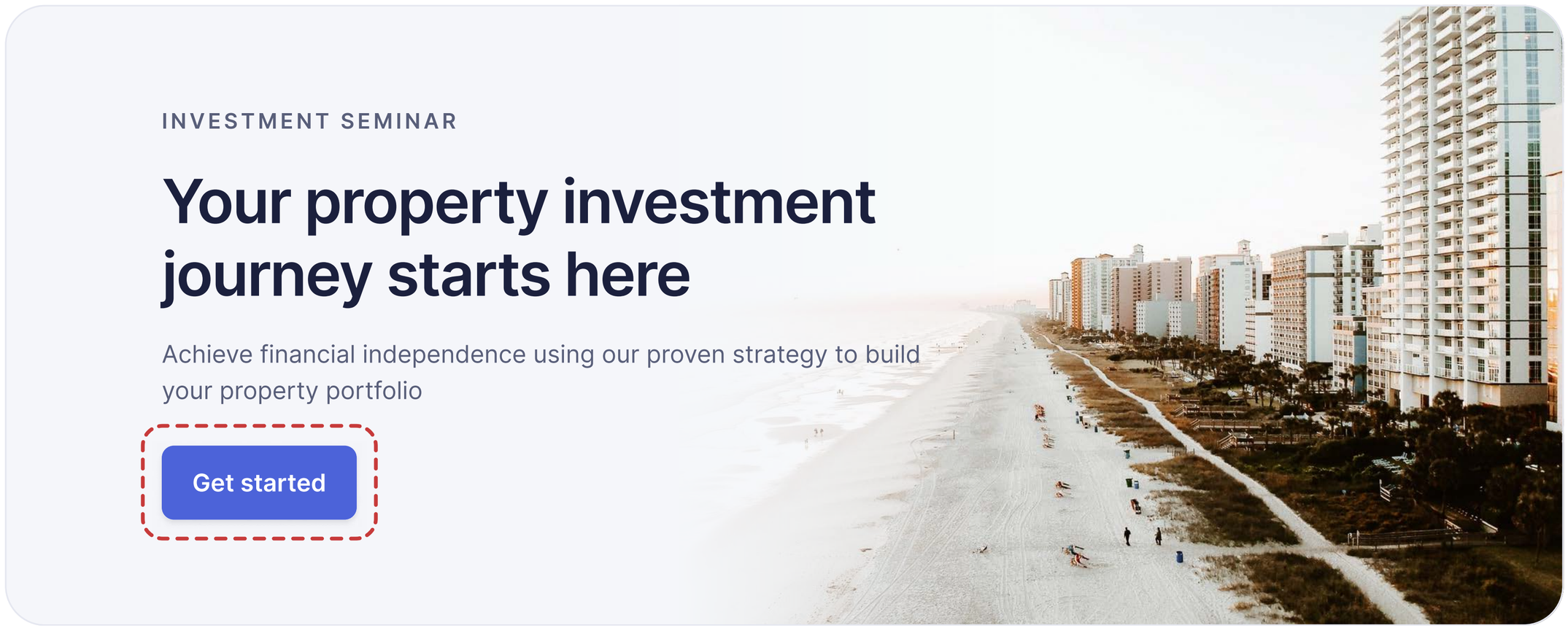
In the following example, an avatar component is used to create larger components. Firstly, the avatar is paired with text, then placed in a card, which is placed in a list of cards on a landing page template.



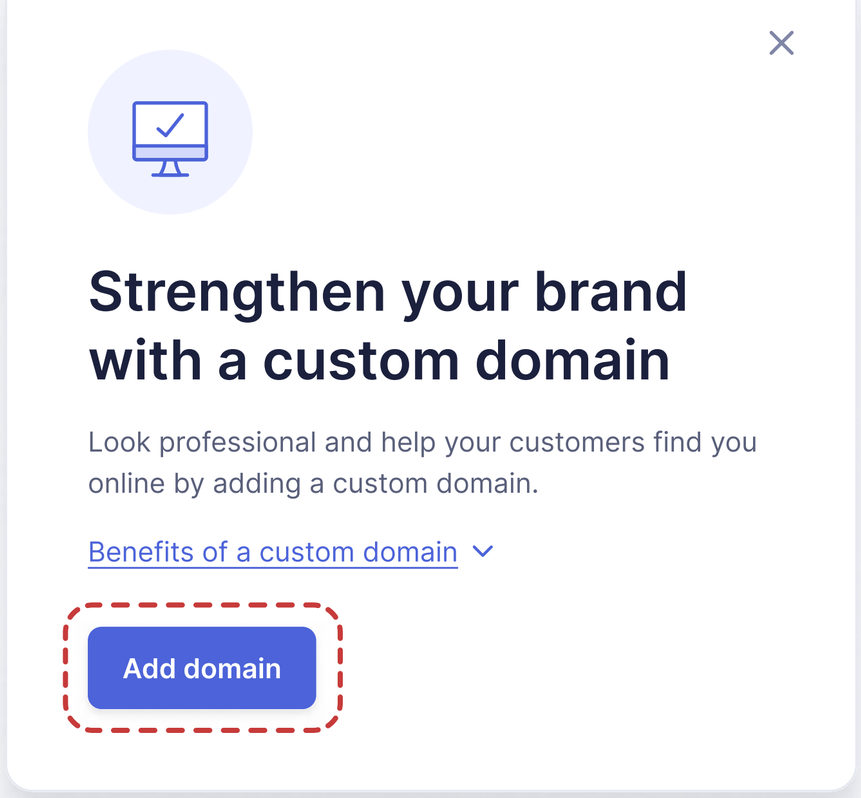


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In the following examples, the same button component is reused inside multiple larger components. In a similar way, each of the larger components can be reused across multiple interfaces or templates.







The same button component is reused inside multiple larger components

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3. Define usage guidelines

Many design systems forget to include guidance on how to use the components and visual styles in the system. Without clear usage guidelines, there's little chance that a team of designers will be able to design a consistent product experience.

How to write the text content for an interface clearly and consistently is also very important and is often overlooked. You'll learn key guidelines for how to write interface text later in the "Copywriting" chapter.

I created a design system to help design the examples in this book. Some of the high level usage guidelines include:

- Indicate interactive elements using the brand colour
- Use sentence case
- Left align buttons
- Left align text
- Try to avoid disabled buttons
- Front-load text
- Be concise and use plain and simple language

You'll learn the rationale for these guidelines and many more throughout the book.

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Ensure an interface is accessible

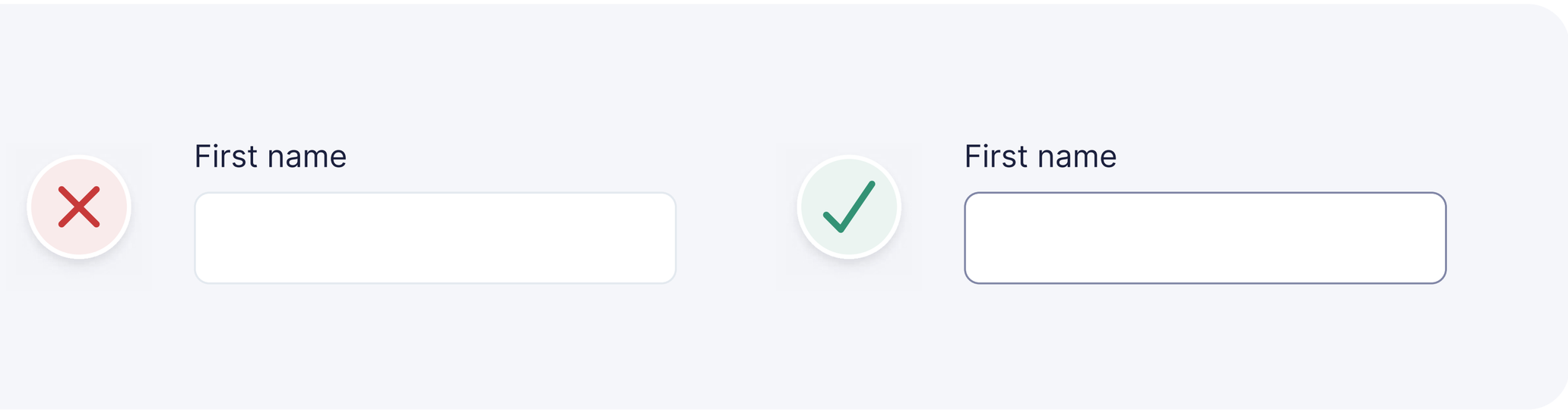
As designers, it’s our responsibility to try and ensure the interfaces we design can be used and understood by the widest audience possible. It’s even a legal requirement in some countries.

We need to accommodate people with disabilities such as blindness, low vision, colour blindness, motor impairment, and mental disabilities. An accessible interface can be used by everyone, regardless of disability.

Keep the following in mind to help ensure an interface is accessible to all:

- Try to provide a comparable experience for all.
- At a minimum, make sure your interface design meets Web Content Accessibility Guidelines (WCAG) 2.1 level AA. They’re a good benchmark for website accessibility and are often a legal requirement.
- Learn about how people with different disabilities access digital products and include them in usability testing. We’ll look at some common assistive technologies soon.

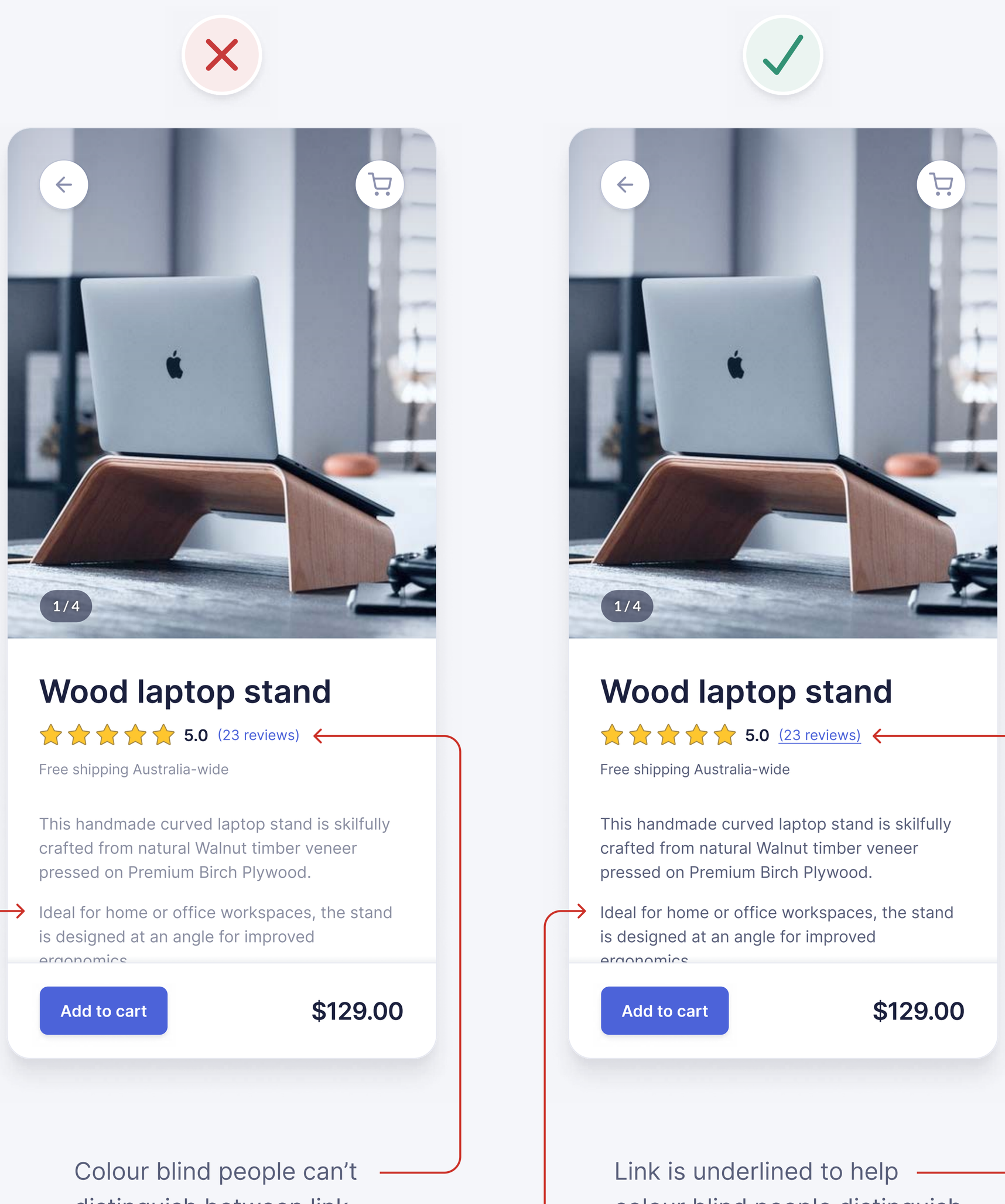
In the following example, people with low vision could struggle to see the light form field border. Ensure the form field is accessible by increasing the border contrast to comply with WCAG 2.1 AA.



Low contrast form field versus high contrast form field

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The next example demonstrates a few quick ways we can use colour and contrast to make an interface accessible to people with low vision. I'll highlight more ways we can meet WCAG 2.1 level AA accessibility requirements throughout the book.



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Good accessibility benefits everyone

An accessible interface benefits everyone, not just those with permanent disabilities. Anyone could get an eye or arm injury, giving them a temporary disability until they recover. Even those with perfect sight might find it difficult to see their screen on a bright sunny day, giving them a temporary situational disability.

Many of the guidelines for creating an accessible interface for people with disabilities also helps create a more user-friendly interface for everyone else. Things like ensuring sufficient contrast, minimising interaction cost, and minimising cognitive load, are all essential for good usability.



Good accessibility is good for business

Making our products accessible doesn’t just benefit user experience, it’s necessary for sustainable business growth and success. A significant number of people have some form of permanent disability, and we’ll all experience temporary and situational disabilities at various points in our lives.

Not having an accessible product means you could be missing out on potential customers. It also means that many of your existing customers are suffering a lesser user experience.

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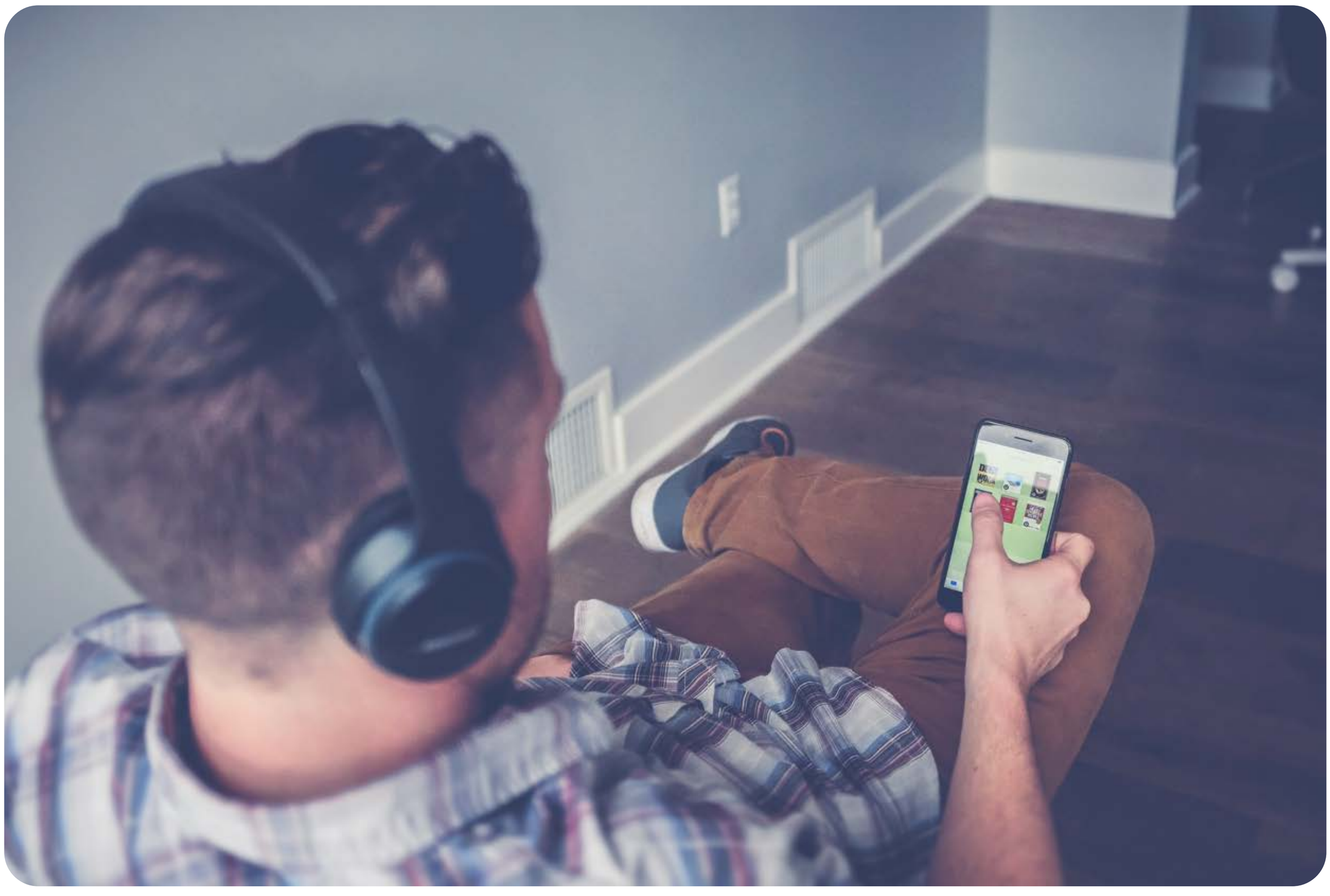
Assistive technology

People with disabilities often use software and other devices to assist them with using digital interfaces. It’s important to be aware of the 2 most common assistive technologies, as they affect interface design.

Screen readers

A screen reader is software that describes an interface (using speech or braille) to someone who can’t see it. Computer users use their keyboard to step through interface elements which are read to them. Mobile users swipe through interface elements or drag their finger across the screen, getting what’s under their finger read to them.

Much of what makes an interface accessible by a screen reader depends on the front end code (which isn’t covered in this book), but it’s important to know about screen readers as a designer too.



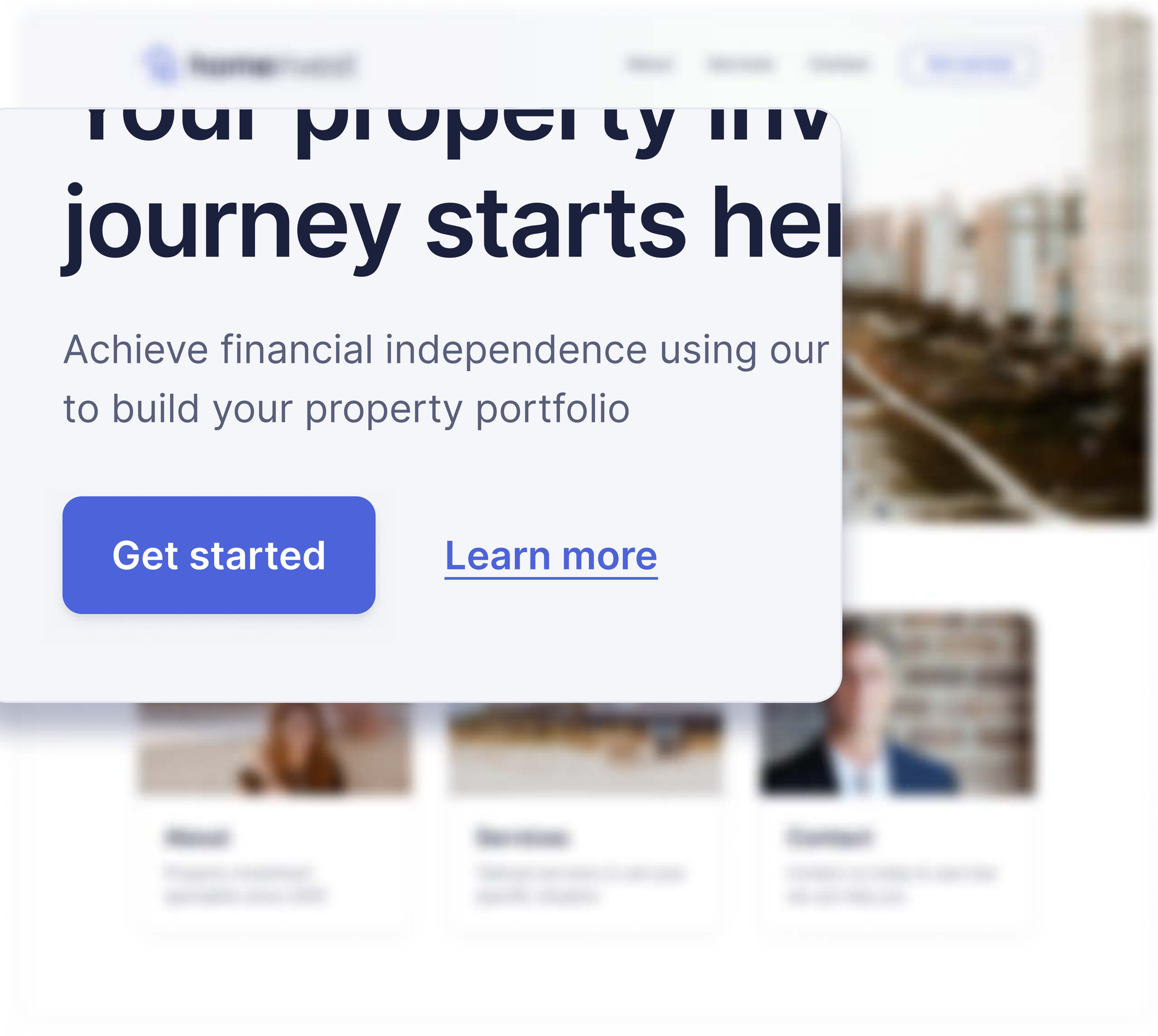
A person with low vision using a screen reader

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Screen magnifiers

A screen magnifier is software that enlarges part of an interface to make it easier for people with low vision to see. They're more widely used than screen readers and are often used in conjunction with screen readers.

Those using screen magnification have a limited view of an interface, as they can only see a small part of it at a time. It's important to keep this in mind when designing an interface. You'll learn how to cater to those using screen magnifiers throughout the book.



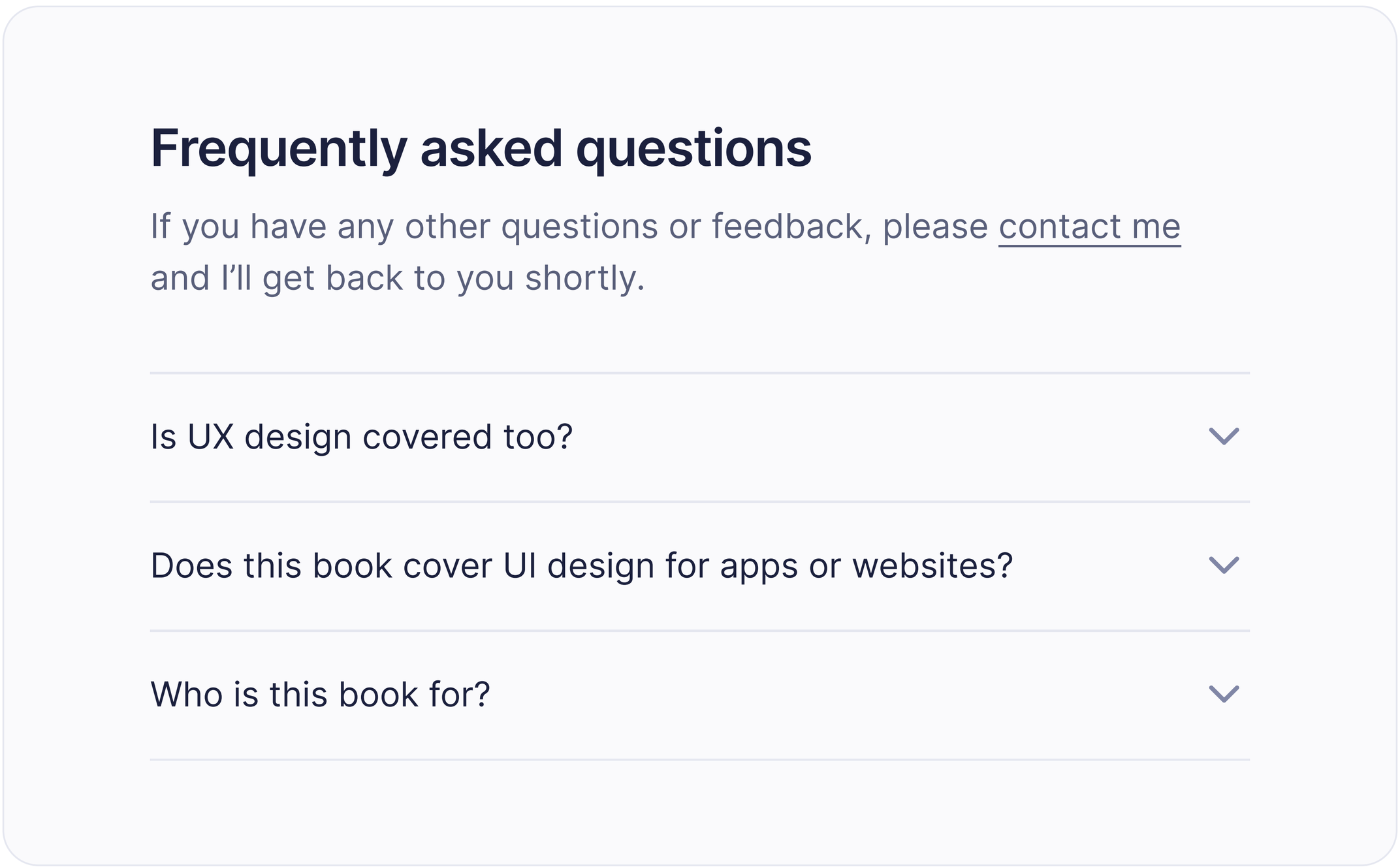
A screen magnifier enlarges part of an interface

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Use common design patterns

According to Jakob’s Law, it’s safest to stick with common or conventional design patterns that people are already familiar with. Design patterns are established solutions to recurring problems.

For example, the following accordion component is a common design pattern used to save space when displaying information. Accordions turn sections of content into a scannable list, allowing people to quickly view the content they need and ignore what they don’t. They generally look like a list and include an icon to indicate that each list item can be expanded.

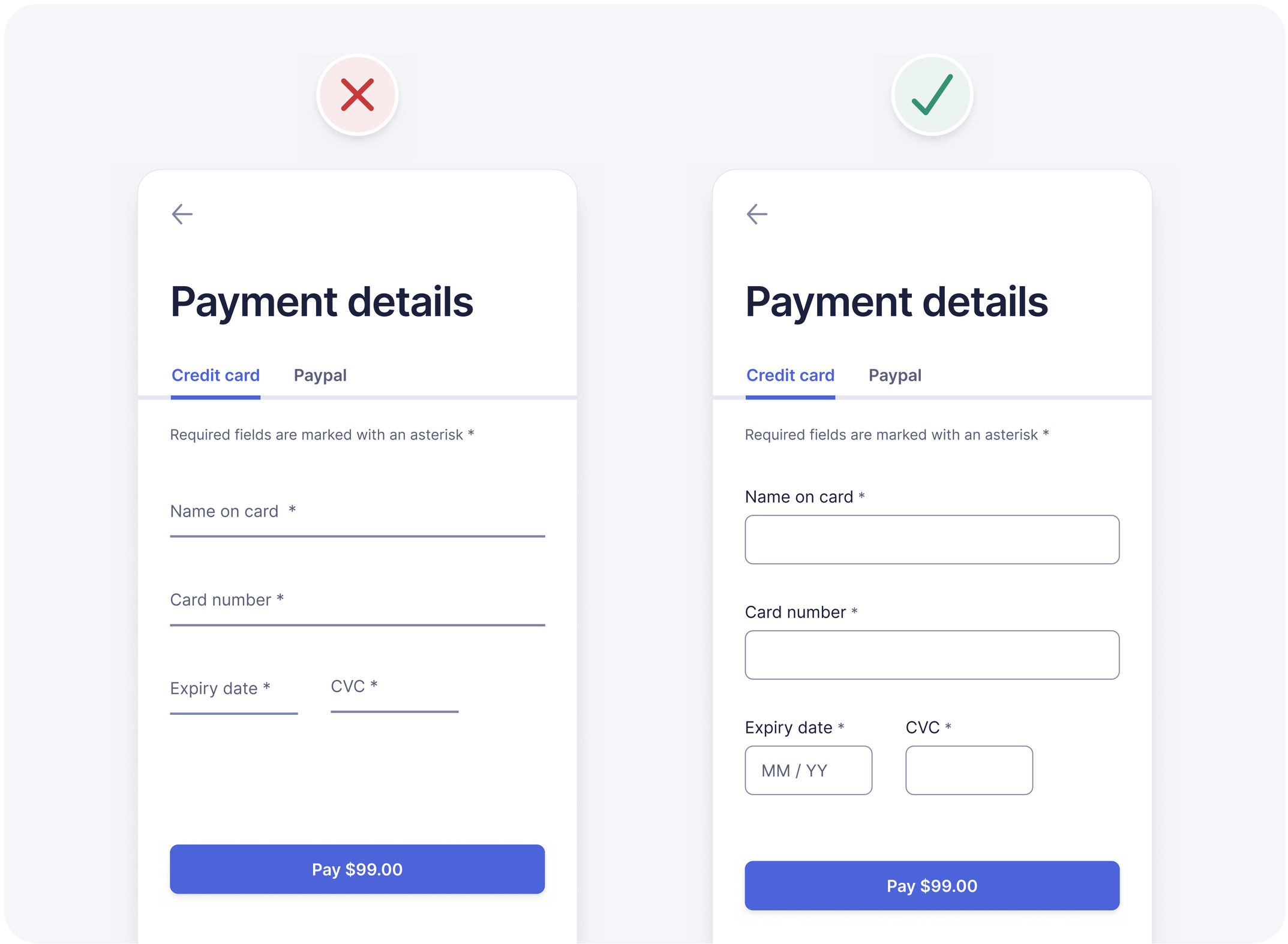


Example of a common accordion pattern

Building on people’s existing mental models (understanding of how something works) means that they won’t need to spend extra time and effort learning new ones. Using common design patterns is a quick and easy way to reduce usability issues, cognitive load, and interaction cost.

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In the following example, unconventional form field styles introduce unnecessary usability risk. It’s safer to use conventional form field styles that people are used to.



Unconventional form field styles versus conventional form field styles

Playing it safe might sound a bit boring, but you can save a lot of time and money on usability testing by sticking with what people are used to. It will also give you time to focus on solving more important problems that could make a larger impact on your product.

I’m not saying you shouldn’t be creative and try to innovate, but do so where it counts. Focus on the unique selling point of your product and create an experience that meets and exceeds user needs.

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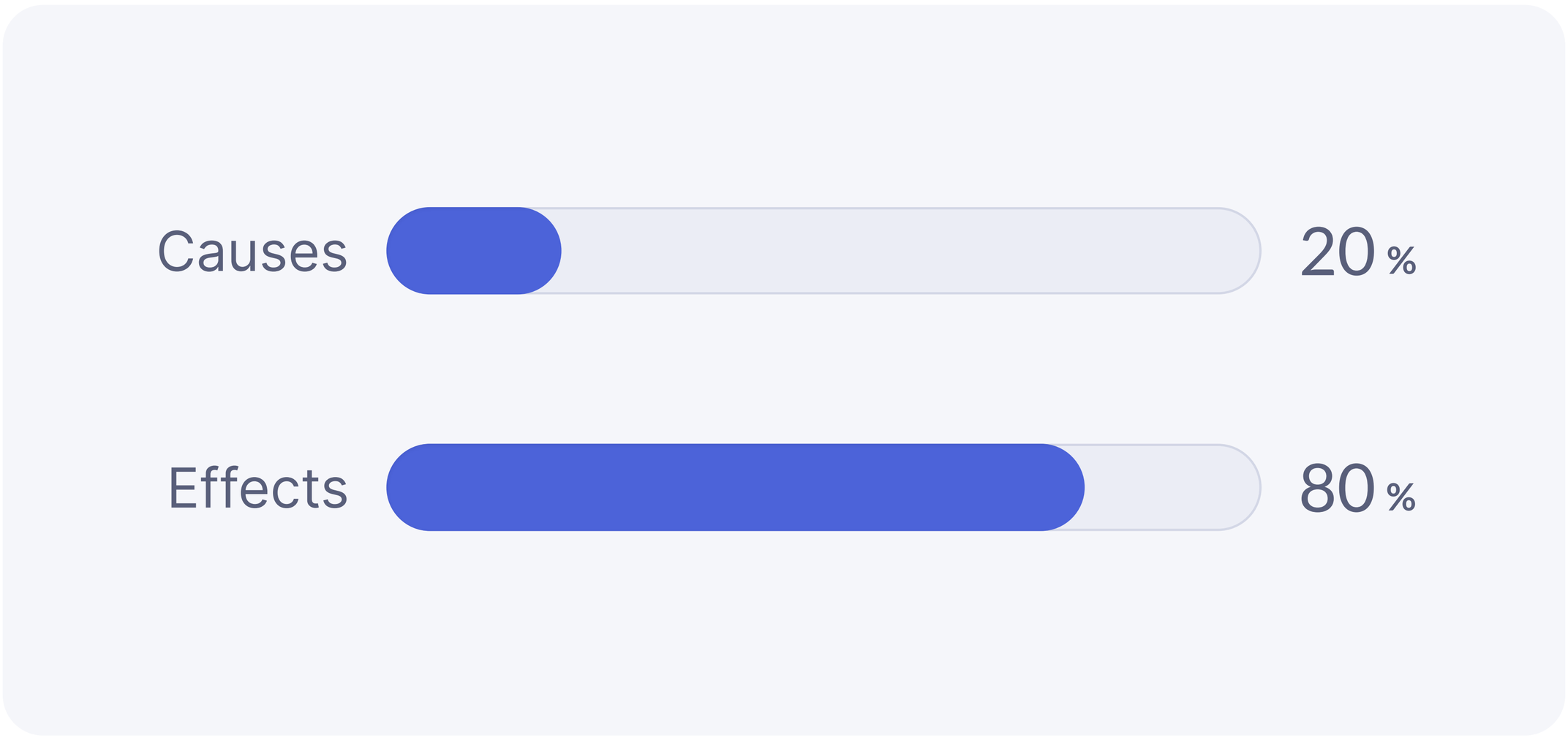
Use the 80/20 Rule to prioritise

Also called the Pareto Principle, the idea of the 80/20 Rule is that roughly 80% of effects come from 20% of the causes. Here are a few ways the 80/20 Rule relates to product design:

- Roughly 80% of your users use 20% of your features.
- Roughly 80% of customer complaints come from 20% of product issues.
- Roughly 80% of a customer's attention is spent on 20% of a web page.

The 80/20 Rule isn't an exact measure, it states that a relatively small number of things will have a large impact. So, it's best to prioritise putting effort into improving the small number of things that will have the largest impact.

For example, optimise your interface design to cater to the tasks most people will be doing, rather than spending time on edge cases (uncommon cases) that will rarely be used.



Roughly 80% of effects come from 20% of causes

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Keep costs in mind

If you’re working on a commercial project, time isn’t free. Every minute spent on user research, design, usability testing, development, and quality assurance costs money.

The more efficient you become as a designer, the more valuable you are to businesses. Here are some simple ways to improve your efficiency:

- Consider using an existing design system, website template, or icon set to save time.
- Outsource time-intensive tasks like illustrations to other designers.
- Stick with familiar UI patterns to save time and money on usability testing. For example, stick with conventional form fields that people are familiar with, rather than designing bespoke ones that look and behave differently.
- Learn how interfaces are built and coded to get a better idea of their technical constraints. This will help you design products that are easier, faster, and cheaper to build.
- Talk to developers early and often to discuss how you might achieve more from your design for less. The simple approach is usually cheaper to build and easier for customers to understand and use.

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Be consistent

Consistency in UI design means that similar elements look and work in a similar way. This should be true both within your product and when compared with other well-established products. This predictable functionality improves usability and reduces errors, as people don’t need to keep learning how things work.

Be consistent within your product

To maintain visual and functional consistency within your product, create a design system to define guidelines for components, templates, visual styles, and language.

Some guidelines I followed to create the examples in this book:

- Indicate interactive elements using the brand colour
- Use sentence case
- Left align buttons
- Left align text
- Try to avoid disabled buttons
- Front-load text
- Be concise and use plain and simple language

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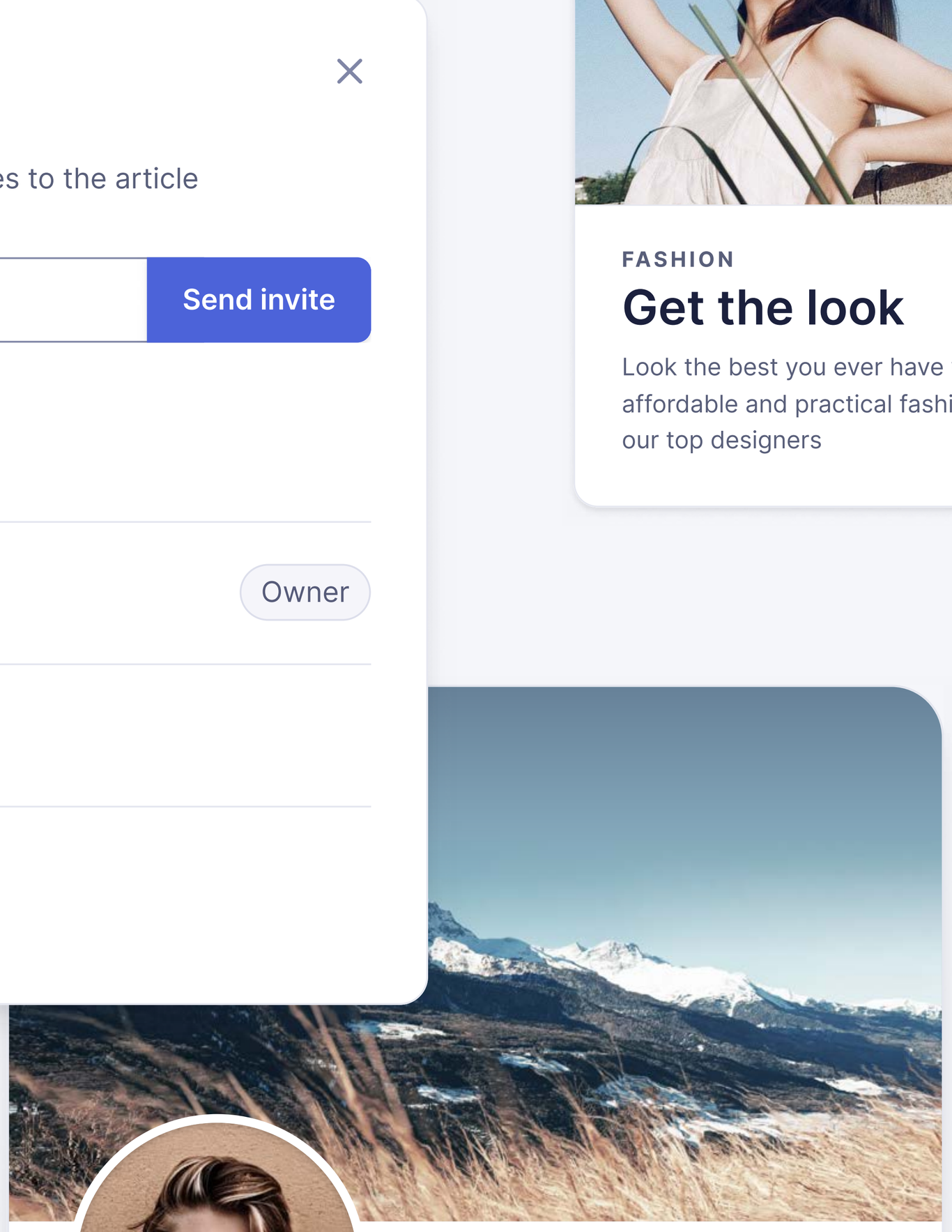
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FASHION

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Look the best you ever have with affordable and practical fashion tips from our top designers





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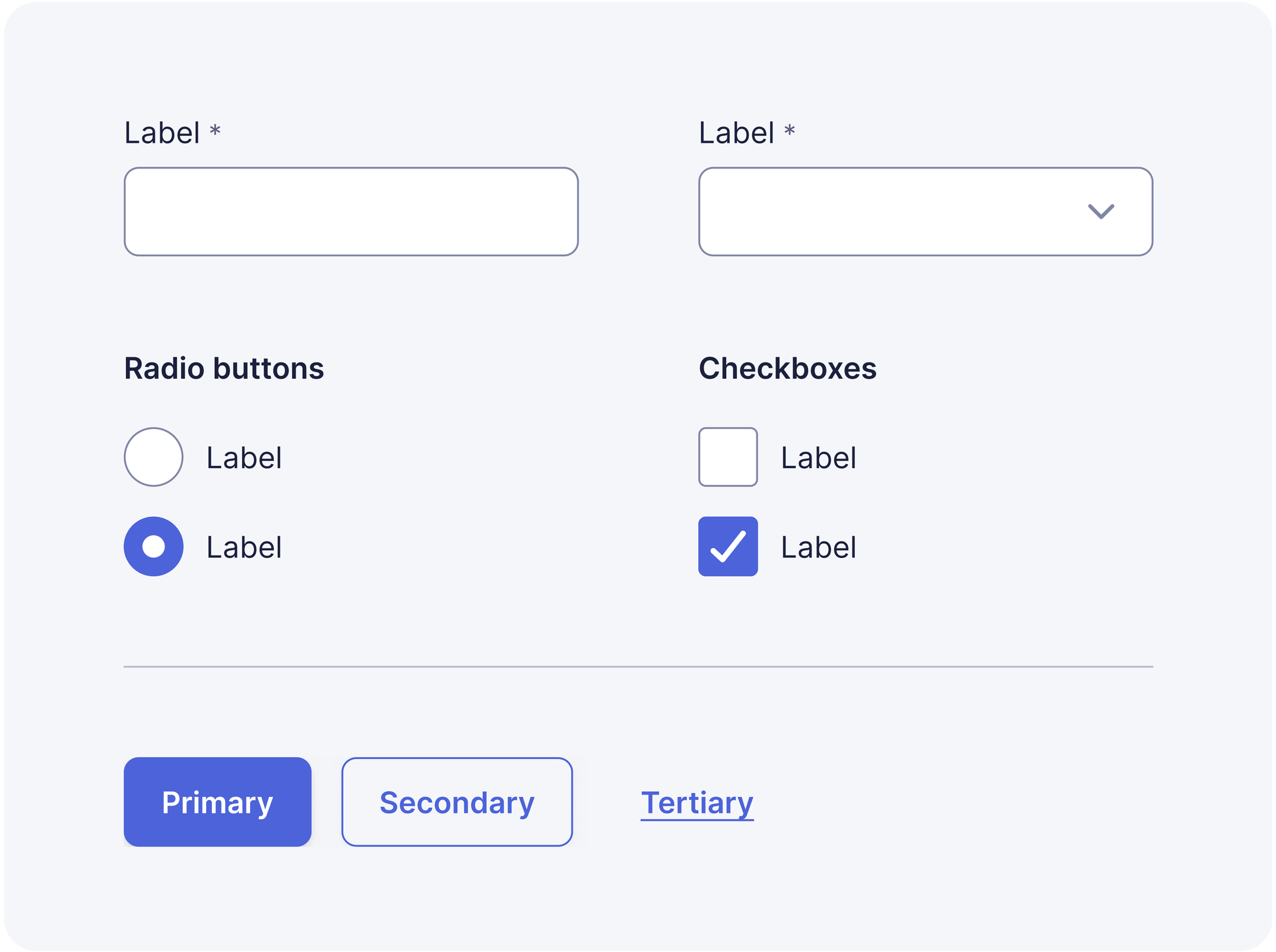
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Be consistent with other products

As well as keeping design patterns consistent within your product, it’s also important to maintain consistency with other products. Being consistent with the majority of other products people are familiar with, means people won’t need to spend extra time and effort learning new patterns.

If your product sits on a certain platform, like an app on iOS or Android, it’s generally safest to follow the platform guidelines (unless they test poorly in usability testing or result in an inaccessible interface).

When in doubt, follow well-established, accessible UI patterns and common conventions that people are used to. For example, text links are underlined, form checkboxes are small squares with a tick icon inside them, and input fields are rectangles with a label on top.

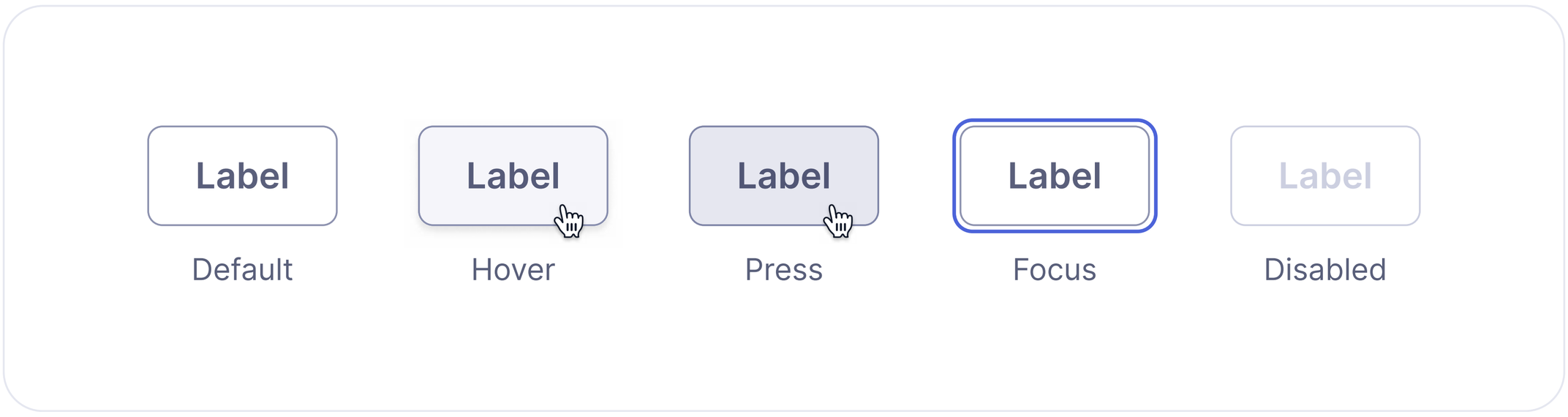


Examples of conventional UI patterns

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Clearly indicate interaction states

It’s important to ensure that interactive elements, like buttons and text links, change their appearance when they’re interacted with. This helps people understand how they can interact with the element and what will happen when they do.



For example, a button should have a different appearance depending on whether you’re looking at it, hovering your mouse over it, or pressing it. Each of these appearances is known as a “state” and there are 5 of them:

- **Default / enabled** - the appearance of an element when not interacted with, indicating that it’s interactive.
- **Hover** - triggered when a cursor is placed over an element to provide visual feedback that it’s interactive.
- **Press / active** - triggered when an element is pressed, indicating that it’s being interacted with.
- **Focus** - triggered by using a keyboard to navigate an interface, indicating the element about to be interacted with.
- **Disabled** - the appearance of an element when it’s not interactive.

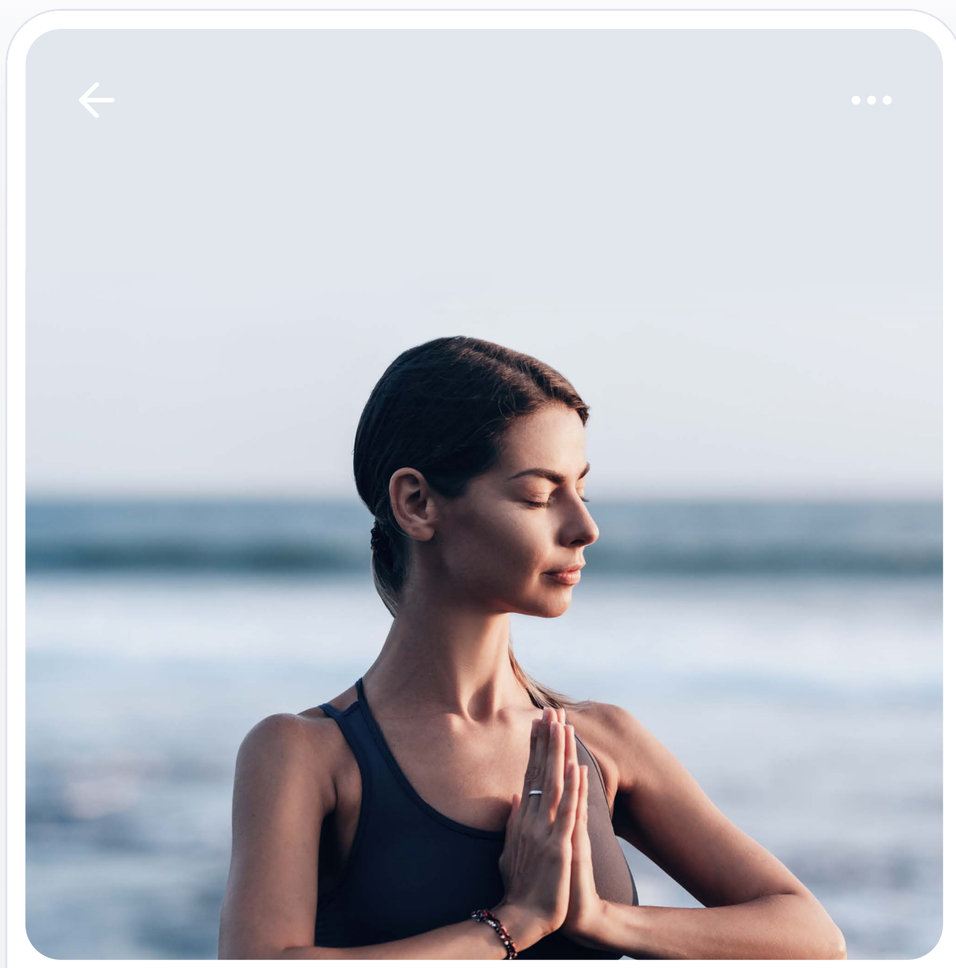
We’ll look at different ways to indicate states in the “Colour” chapter.

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TUTORIAL - FUNDAMENTALS

Apply what you've just learned

Let's apply some of the guidelines you've learned to improve the following fitness app example.



Morning Yoga Workout

WITH BROOKLYN SIMS

5.0 (23 reviews)

Inhale Good Vibes

20 mins | Beginner | Ambient | None

Escape the stresses of quotidian existence with this harmonious fusion of contemplative pranayama techniques and corporeal postures. You will feel rejuvenated and ready to take on the day.

The session commences with a succinct centering exercise, fostering a seamless detachment from external distractions and inviting full immersion into the present moment.

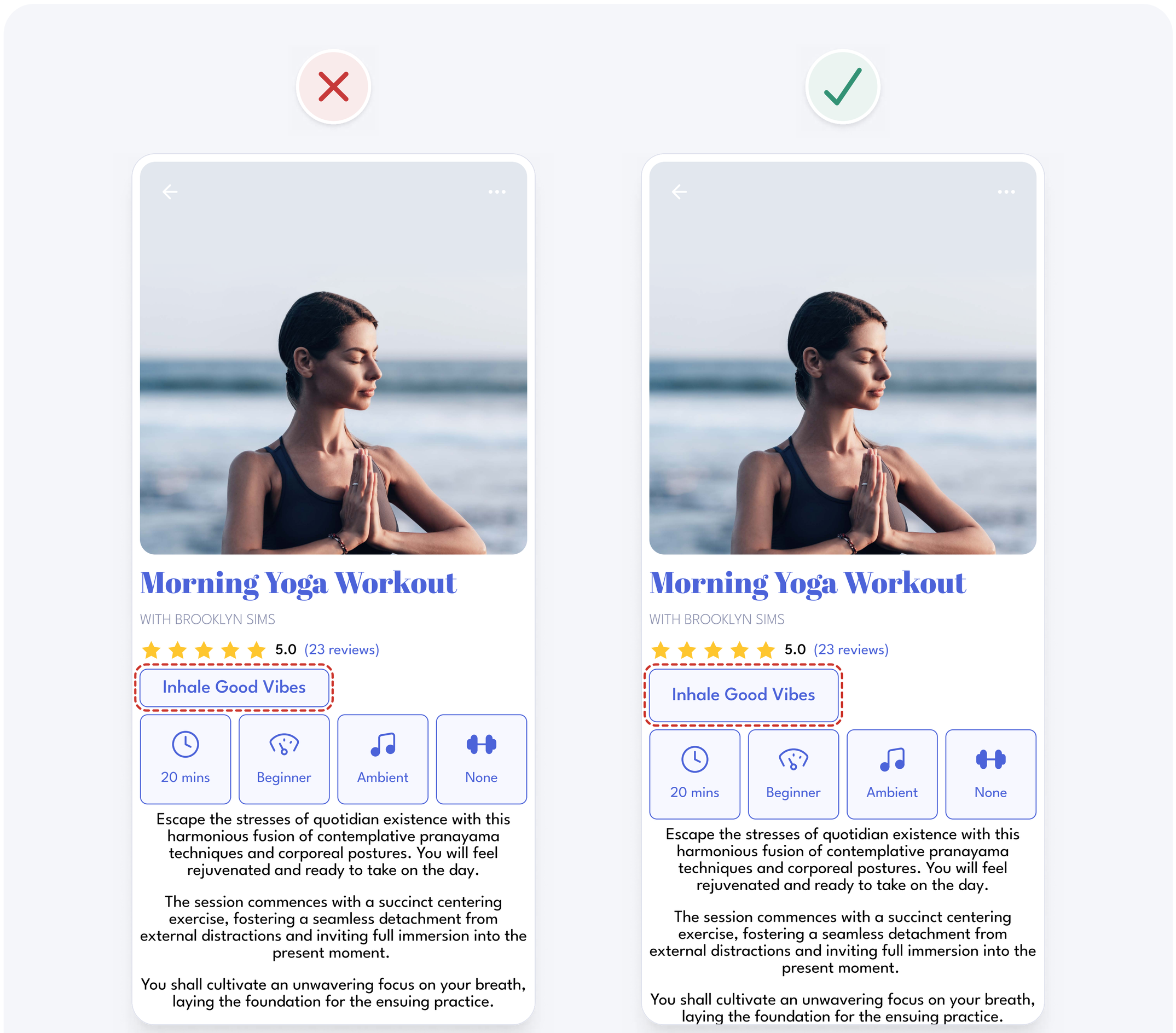
You shall cultivate an unwavering focus on your breath, laying the foundation for the ensuing practice.

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Minimise interaction cost

In the fitness app example, the main call to action button is relatively small. Small targets are more difficult to touch than large ones. This is especially true for those with impaired motor control, or even someone holding their phone with one hand and using their thumb.

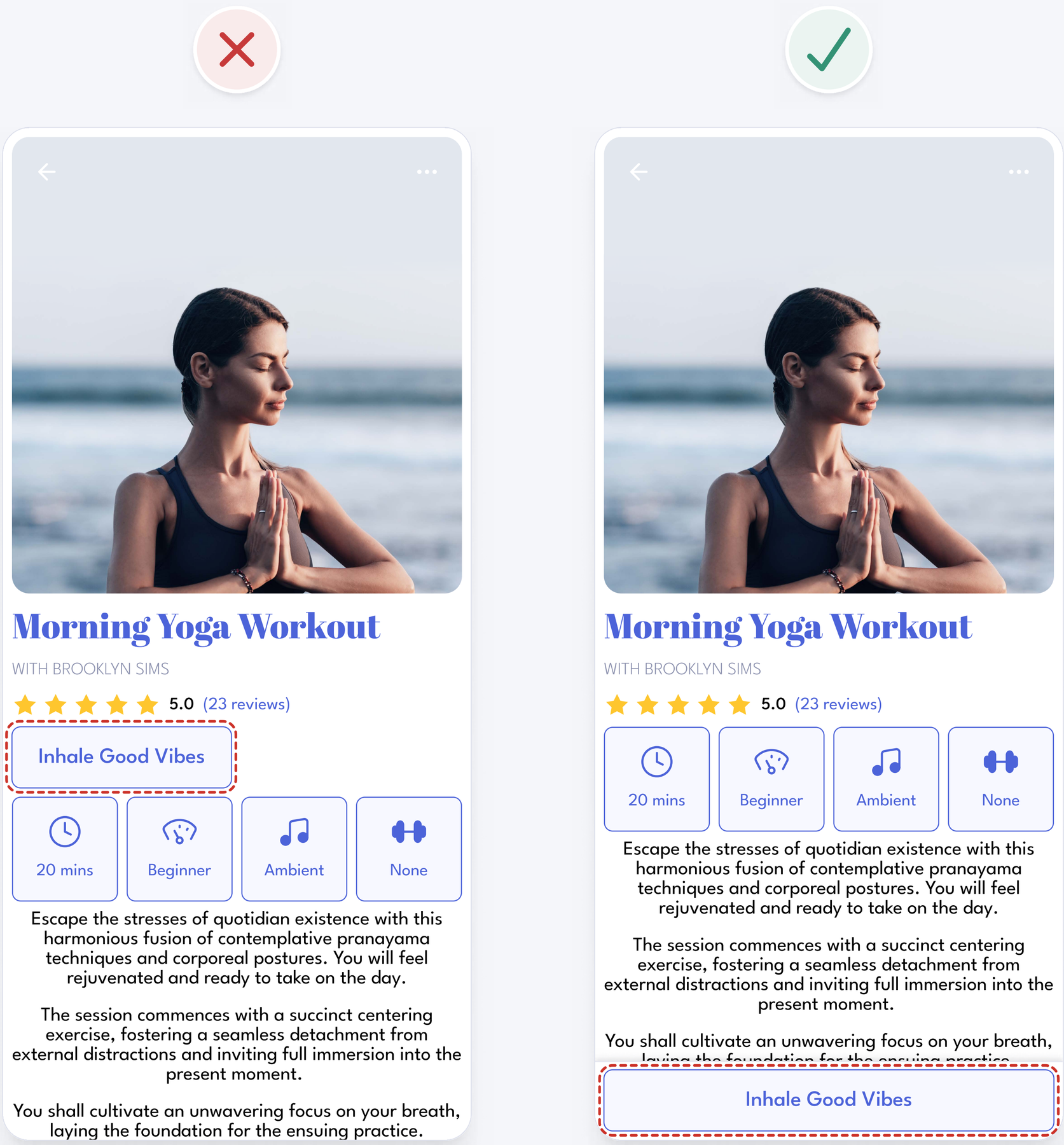
Increasing the button size to at least 48pt tall makes it faster and easier for people to press it.



Button size increased to at least 48pt tall to make it easier to press

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Moving the button to the bottom of the screen makes it easier to reach for those using one hand. Stretching the button the full-width of the screen helps both left and right handed people to reach it.



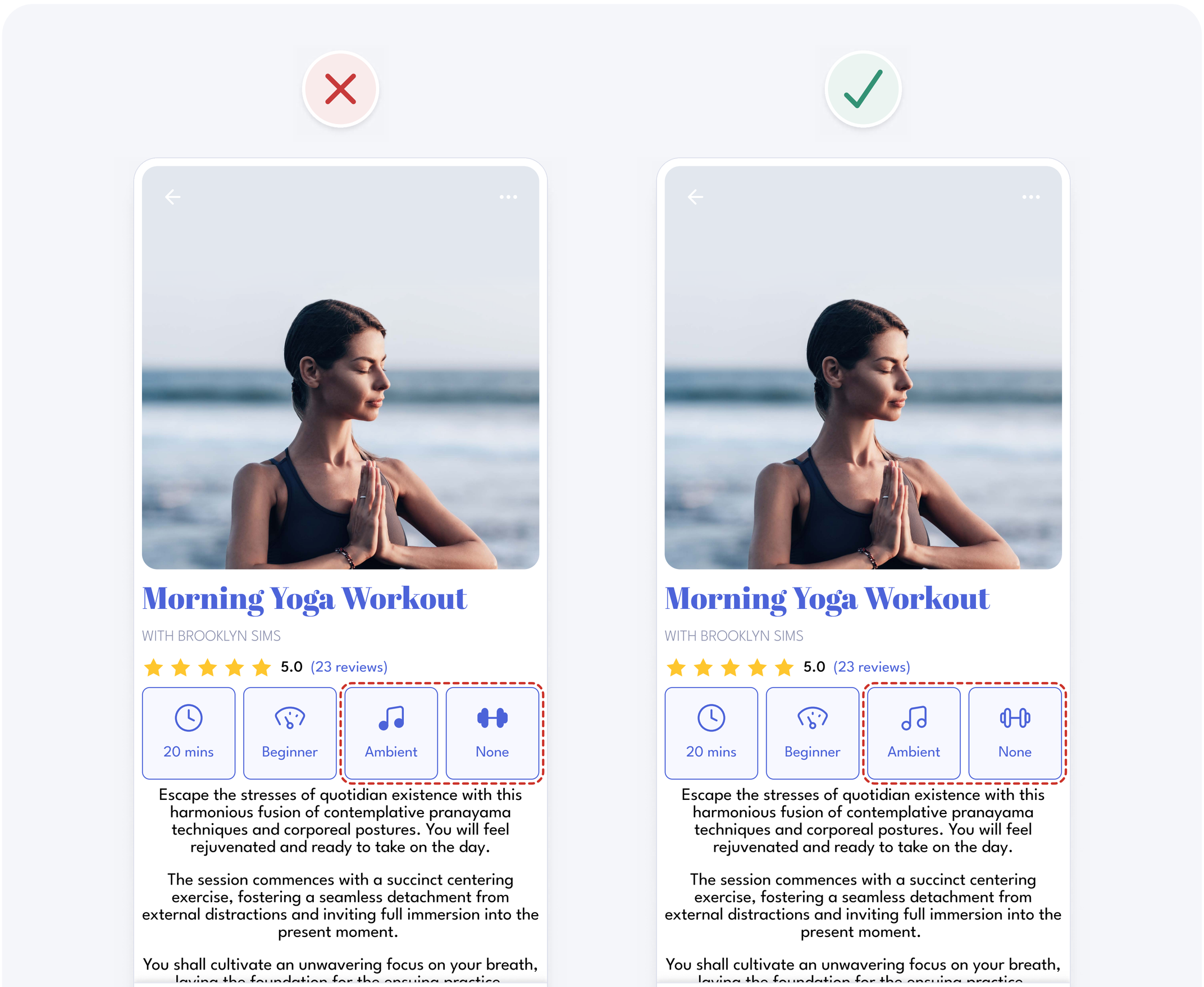
Button moved to the bottom and stretched to the full-width of the page

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Be consistent

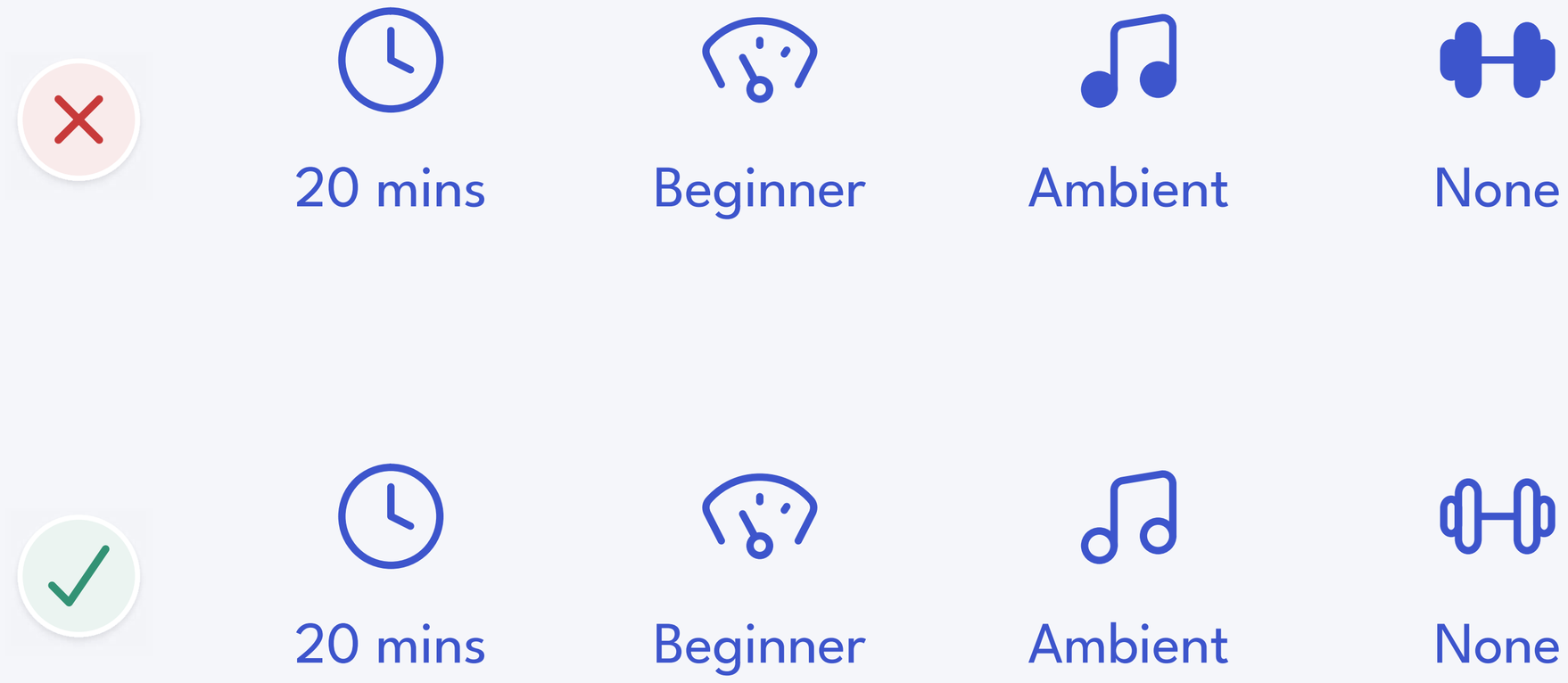
In the fitness app example, the icon styles are inconsistent, as some are filled and others aren’t. This could confuse some people, as filled icons often indicate that an element is selected.

Sticking with an outlined style for all icons helps improve consistency and gives each icon a similar level of prominence. Try to ensure the thickness of outlines is also consistent.



Icon styles updated to be consistent

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Icon styles updated to be consistent

Great work. The example app design is looking better already and we’re learning some fundamental design guidelines in the process. We’ll continue improving the example fitness app at the end of each chapter.

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Chapter summary

- Minimise usability risk by keeping interfaces simple and familiar.
- Don’t just make design decisions based on what looks pretty, ensure that every interface detail has a logical reason behind it.
- Minimise interaction cost and cognitive load as much as possible.
- Create a design system of predefined styles, modular components, and usage guidelines to help you make consistent design decisions faster.
- Good accessibility means great usability, so design interfaces for everyone to use.

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Your progress

1 of 8 chapters completed

Fundamentals

2 Less is more

3 Colour

4 Layout and spacing

5 Typography

6 Copywriting

7 Buttons

8 Forms

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CHAPTER 2

Less is more

Practical techniques to simplify interfaces by removing unnecessary details

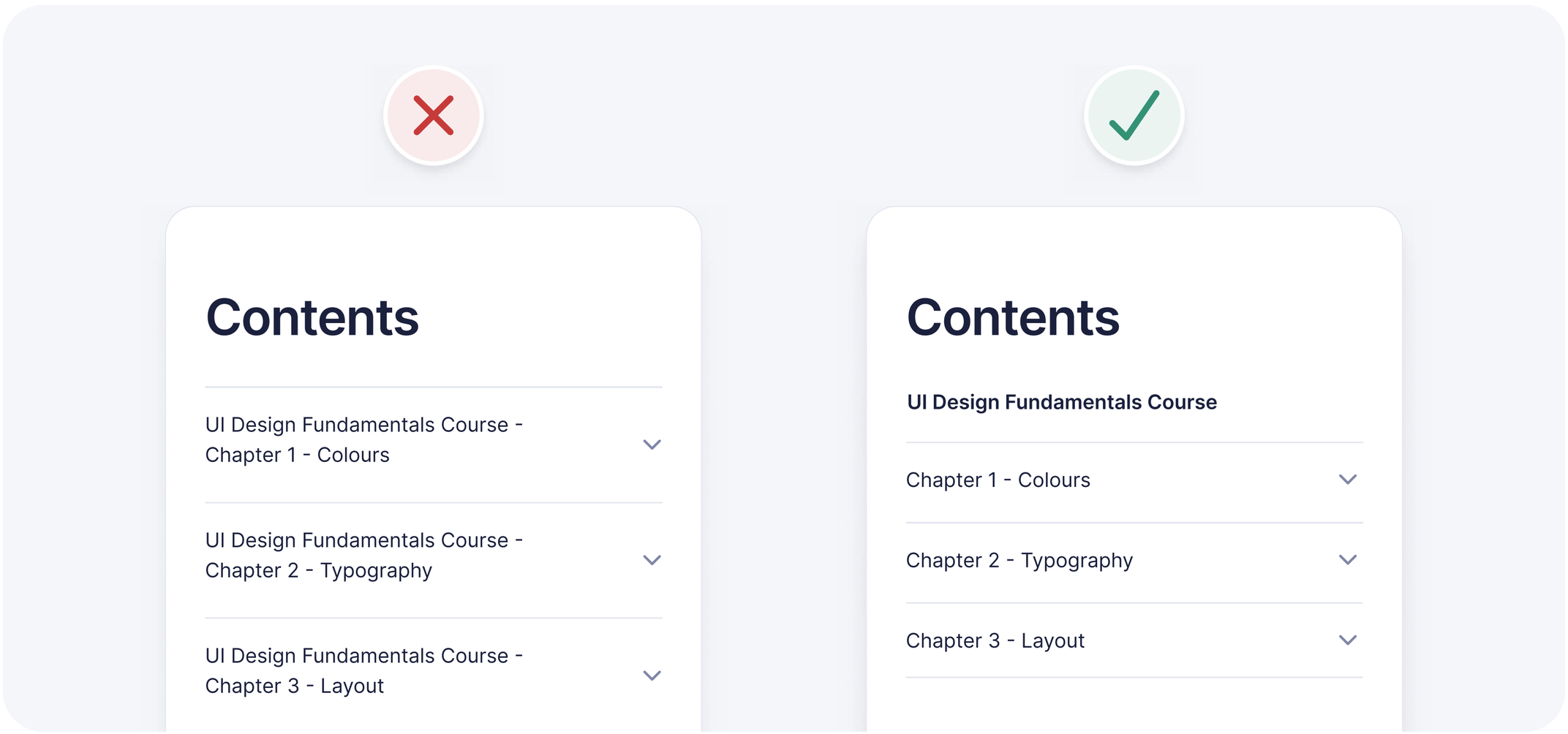
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Remove unnecessary information

Every element you add to your interface competes with existing elements. This can make it harder for people to understand. Unnecessary information is a distraction that increases cognitive load, so try to ensure every interface element has a logical reason behind it. Some quick tips:

- Remove repeated elements to instantly simplify your interface without losing information.
- Avoid unneeded words and introductory phrases. I'll go through this in more detail in the "Copywriting" chapter.
- Reveal less important information gradually. This is called progressive disclosure and you'll learn about it later in this chapter.

In the following example, the course name is repeated. Making the course name a subheading removes the repetition and simplifies the design. It also helps people differentiate between the chapters.



Removing repeated elements can help simplify an interface

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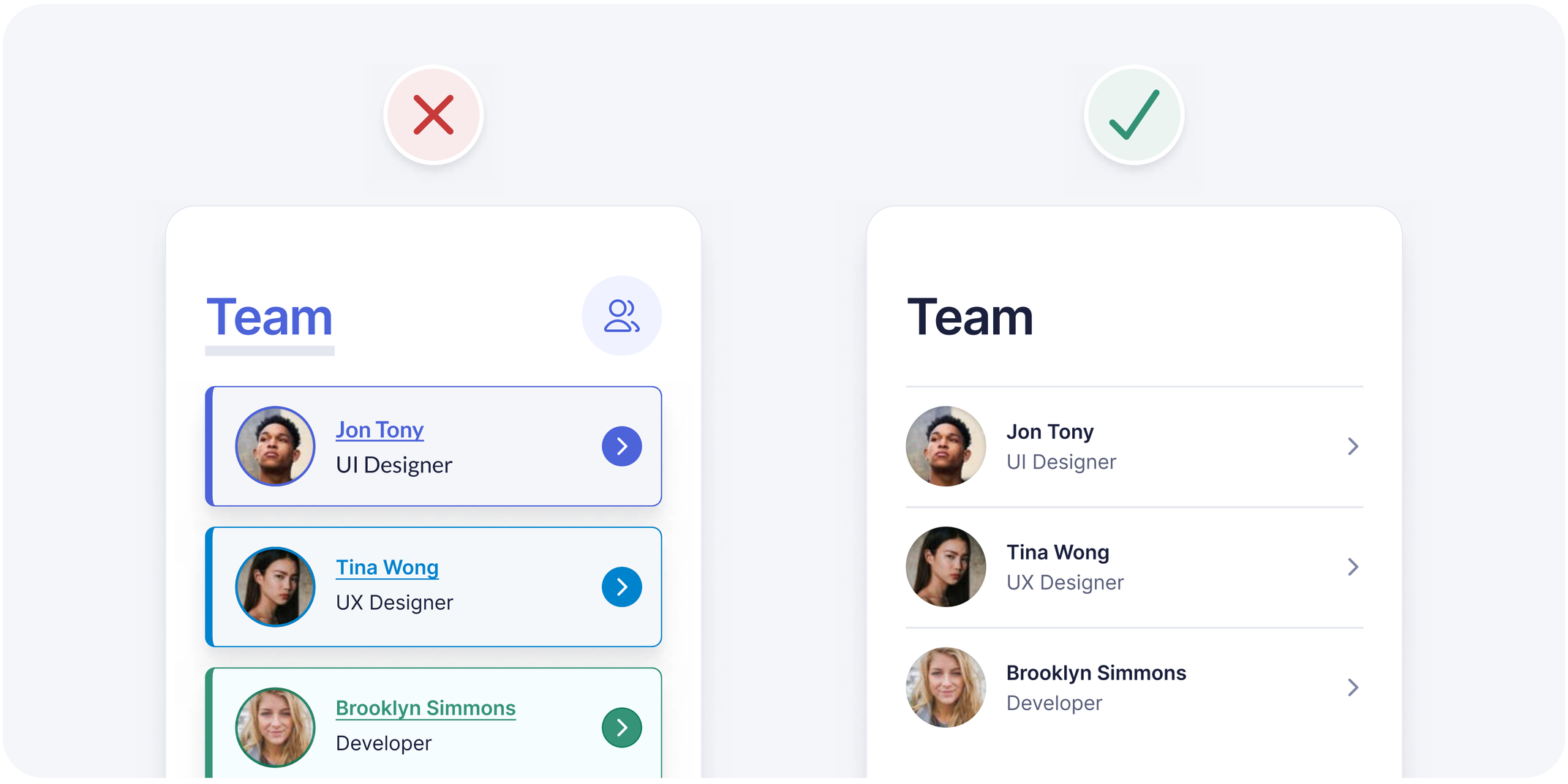
Remove unnecessary styles

Just like unnecessary information can be distracting and increase cognitive load, so can unnecessary styles. Avoid unnecessary lines, colours, backgrounds, and animations to create a simpler, more focused interface.

Unnecessary styles are those that don’t convey information, they’re purely decorative. I’m not saying that you shouldn’t have any decorative styles, as aesthetics are important, but try to ensure they don’t hinder usability.

In the following example, there are multiple unnecessary styles:

- The list items have decorative colours and styles that lack purpose. This could be confusing to some who assume the colours have meaning.
- The heading is coloured blue and underlined even though it’s not a link.
- The decorative icon near the heading could be confused for a button.
- The icons are all very prominent and compete for attention.



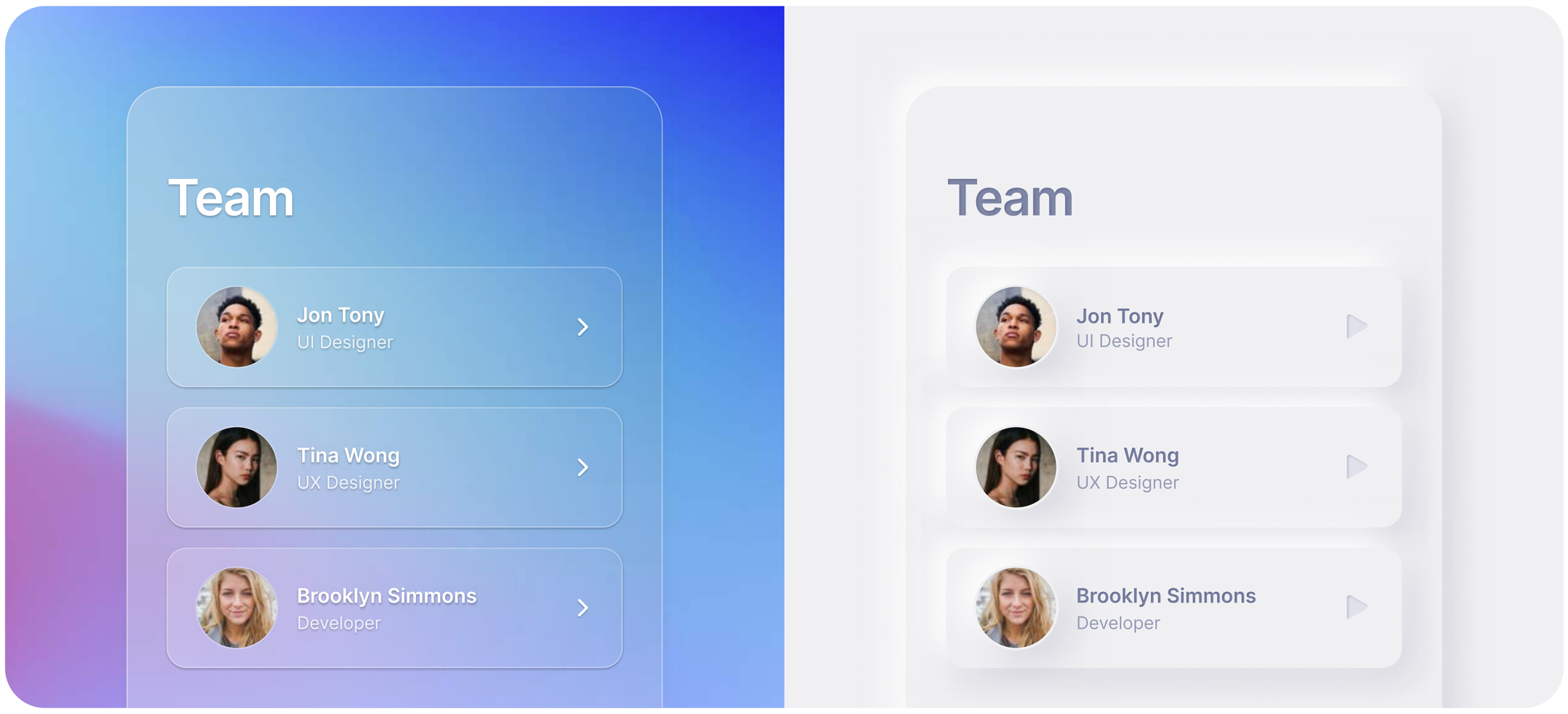
Unnecessary styles can hinder usability

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Style trends fade

It’s tempting to use the latest popular visual style trends, but just remember that trends are always changing. The more trendy effects you use, the worse your interface will age over time. Sticking with minimal styles that highlight quality content is better for longevity.

While many popular visual styles look great, some simply aren’t practical in real-world products, as they’re prone to usability and accessibility issues. In the following “Glassmorphic” and “Neuomorphic” style examples, it’s very difficult to create a clear visual hierarchy or achieve sufficient contrast using those visual languages. You’ll learn more about visual hierarchy and colour contrast later on.



“Glassmorphic” and “Neuomorphic” style examples

I’m not saying that you shouldn’t experiment with different visual styles, just make sure they don’t hinder usability or exclude people from being able to use your interface. Throughout the book, you’ll build a strong foundation of knowledge that will empower you to experiment and innovate while still maintaining a user-friendly and accessible interface.

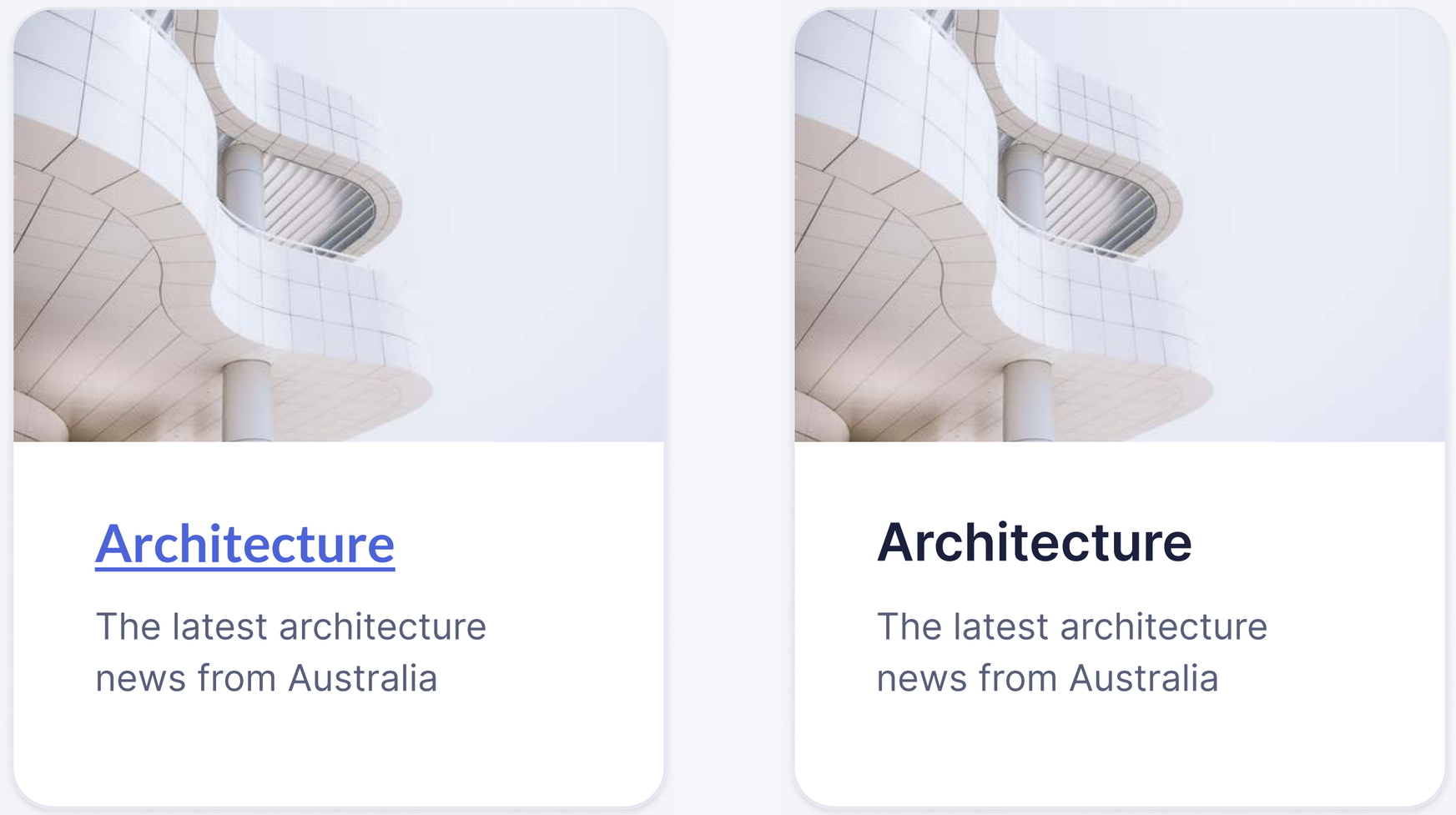
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Not all links need to be underlined

For accessibility, consistency and good usability, it’s safest to make text links coloured and underlined. This conventional link treatment helps differentiate links from other text and clearly indicates interactivity.

Some UI elements already look and feel interactive, so you don’t need to underline and colour the text. Things like navigation menus, cards, and tabs have other cues to indicate they’re interactive. Removing the conventional link treatment for these components can help simplify your interface.

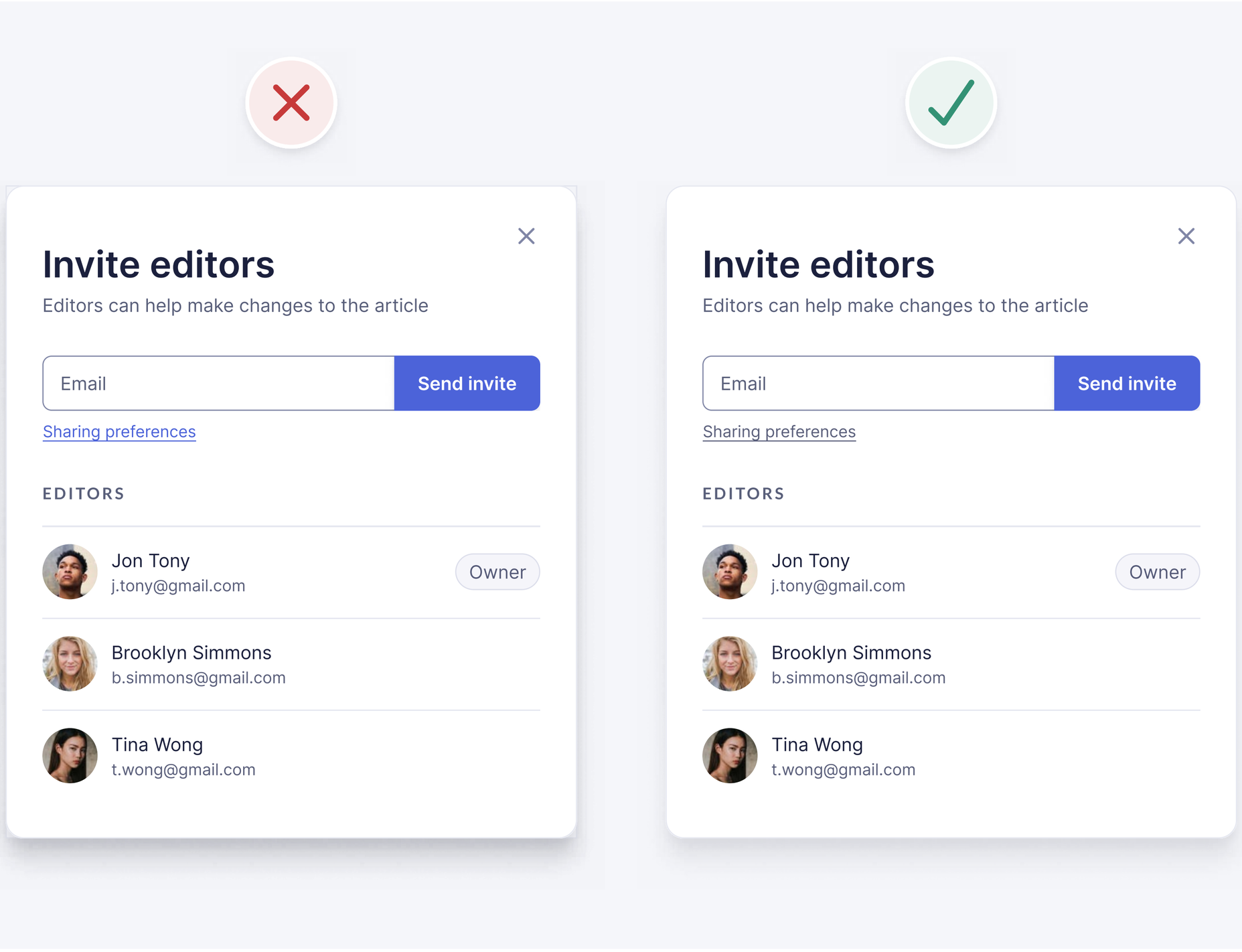
The cards in the following example still feel interactive, with or without the conventional link treatment. The combination of image and text inside a raised container are sufficient visual cues to indicate the card is interactive. Feel free to keep the conventional link treatment for extra clarity.



The card component still looks interactive without blue underlined text

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Styling some text links with both the brand colour and an underline can make them too prominent. This can confuse the order of importance, or visual hierarchy, of elements. Removing the colour from links in these cases can help correct the visual hierarchy, as seen in the following example. You'll learn more about visual hierarchy in the "Layout and spacing" chapter.



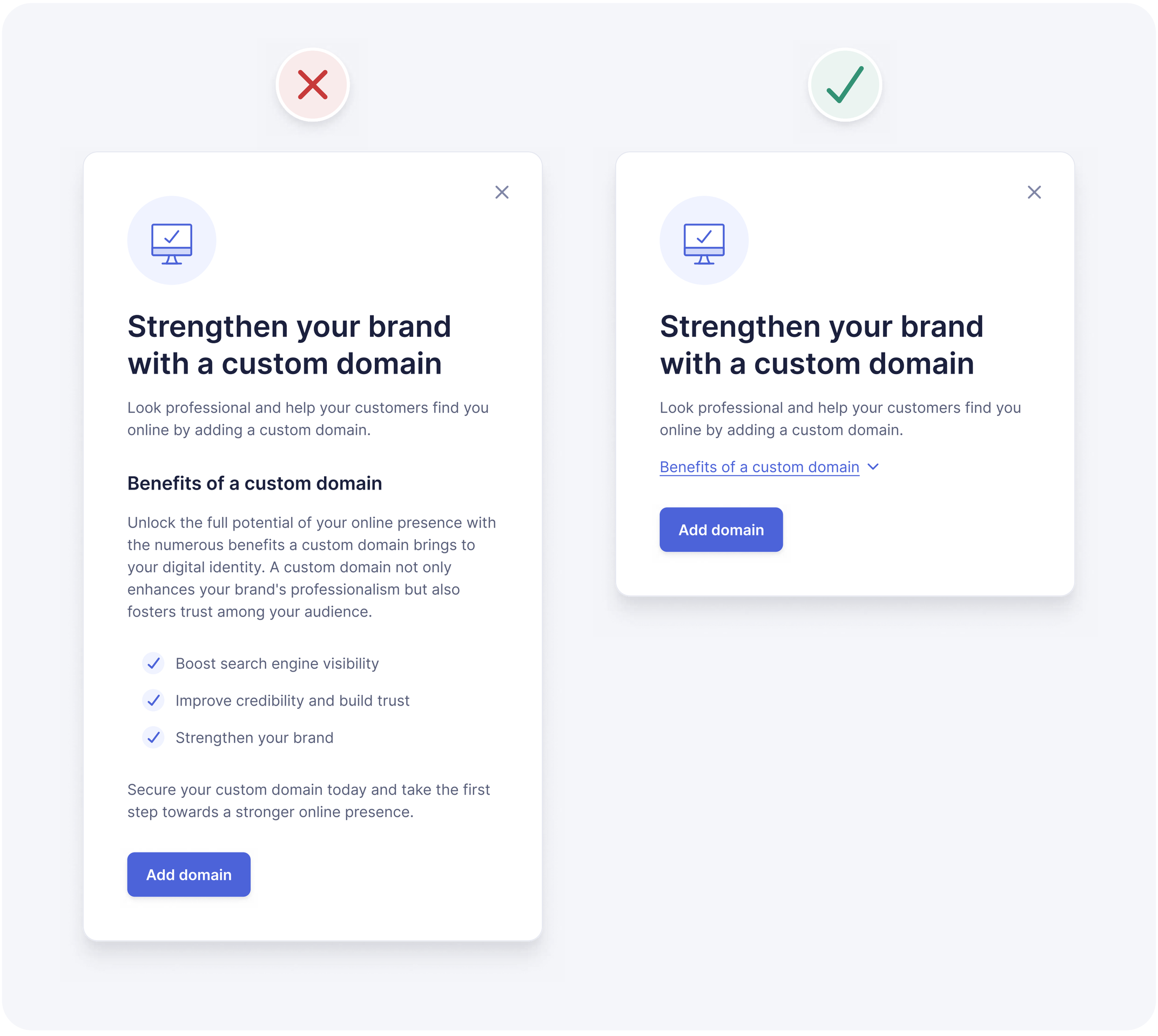
Text link colour is removed to help correct the visual hierarchy

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Use progressive disclosure

Progressive disclosure is the act of revealing information gradually as needed. Show people only what they need to know to complete the task at hand, rather than overwhelming them with all of the information upfront. For those who want more information, allow them to access it easily.

Progressively disclosing information adds extra interactions, but it can significantly reduce cognitive load and speed up decision making.

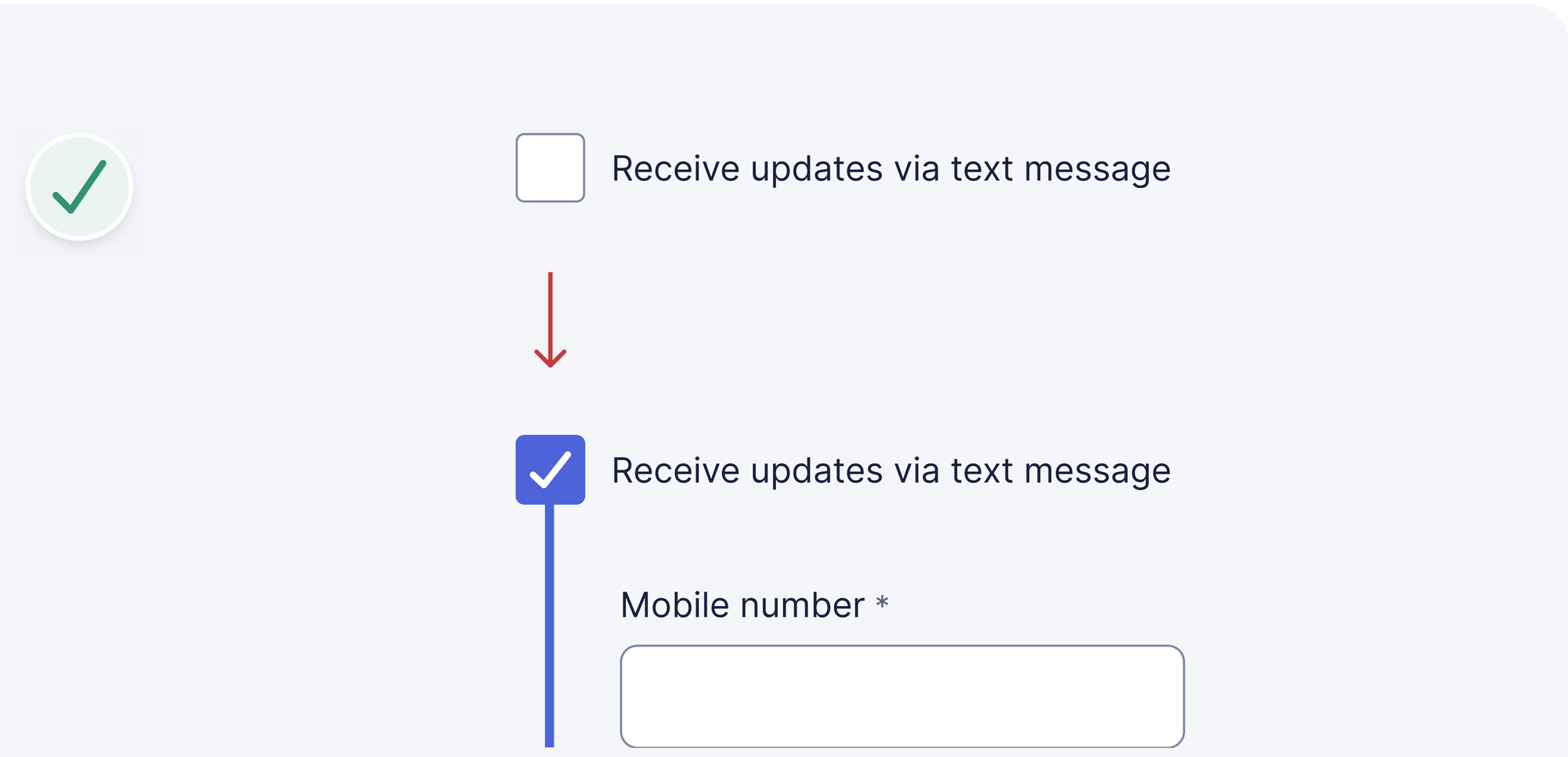


Example of progressive disclosure of information

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In the previous example, a long page of text is shortened and additional information can be displayed via a text link. A descriptive label is used for the text ink to aid scanning and ensure the action makes sense when read out of context. You'll learn more about labelling actions later in the book.

In the following form, we progressively disclose the mobile number field to those who need it, rather than showing it to everyone. This avoids the need for an optional mobile number field and simplifies the form for people who aren't interested in receiving updates. You'll learn more about opt-in form fields in the "Forms" chapter.



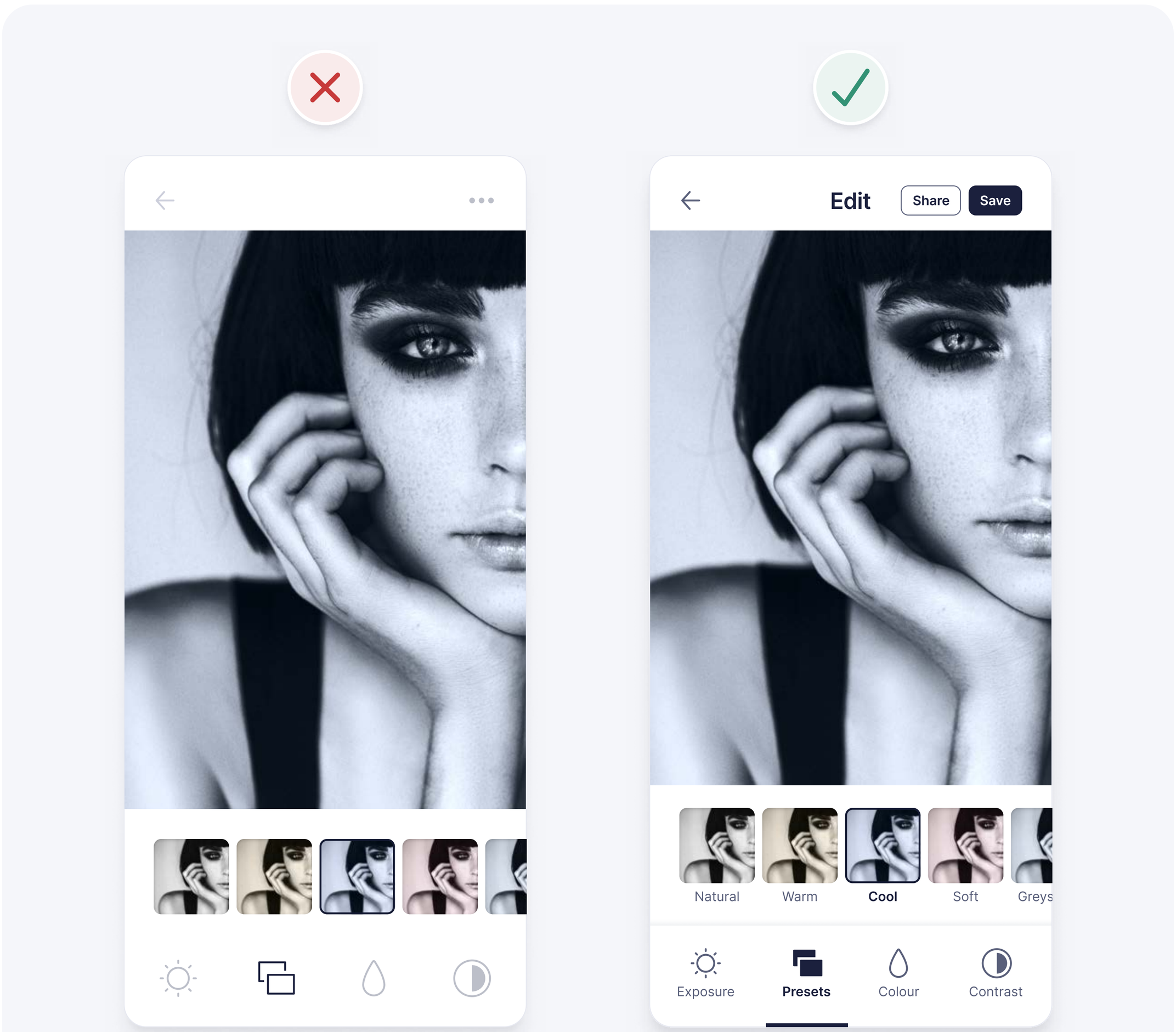
The mobile number field is displayed on click of the checkbox

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Don’t confuse minimalism with simplicity

Minimal doesn’t mean simple. We have a tendency to favour minimal interfaces as they can look beautiful and clean. A minimal interface has fewer elements and styles, but isn’t necessarily simple to understand and use.

Minimal interfaces can often be vague or confusing as they lack crucial details needed for good usability. Simplification isn’t just about reduction. Removing or hiding too much can harm usability. You need to make sure that you’re not removing critical information or details.



Vague minimal interface versus a simple and intuitive one

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The previous example demonstrates how a minimal interface design could be confusing to use. Some of the issues include:

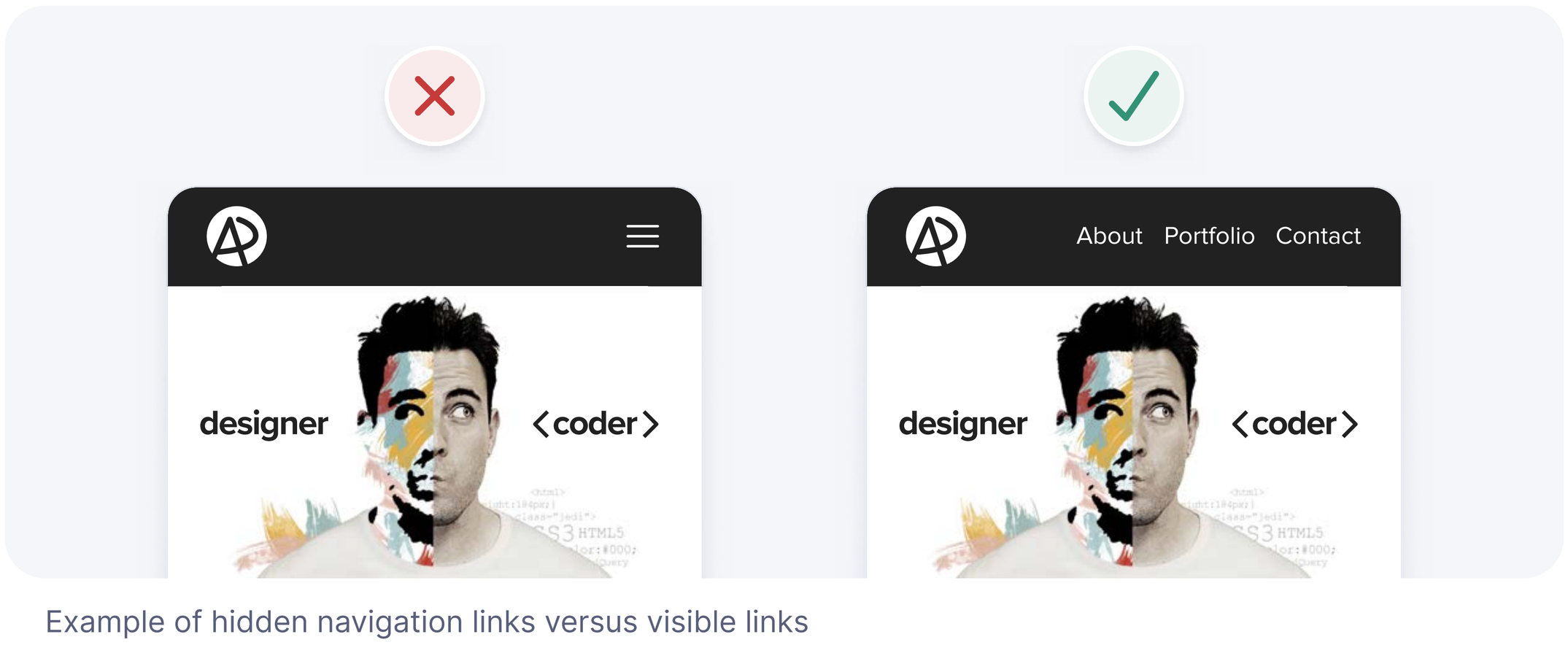
- The page, photo filters, and bottom navigation menu aren't labelled, so it's unclear what they're for.
- The selected state of the filters and navigation menu is very subtle, so it's unclear which one is selected.
- The share and save actions are hidden and could be missed.
- The contrast of the icons is insufficient and could be difficult for some people to see.

These issues can be fixed by making sure important actions are clearly visible, labelled, and have sufficient contrast.

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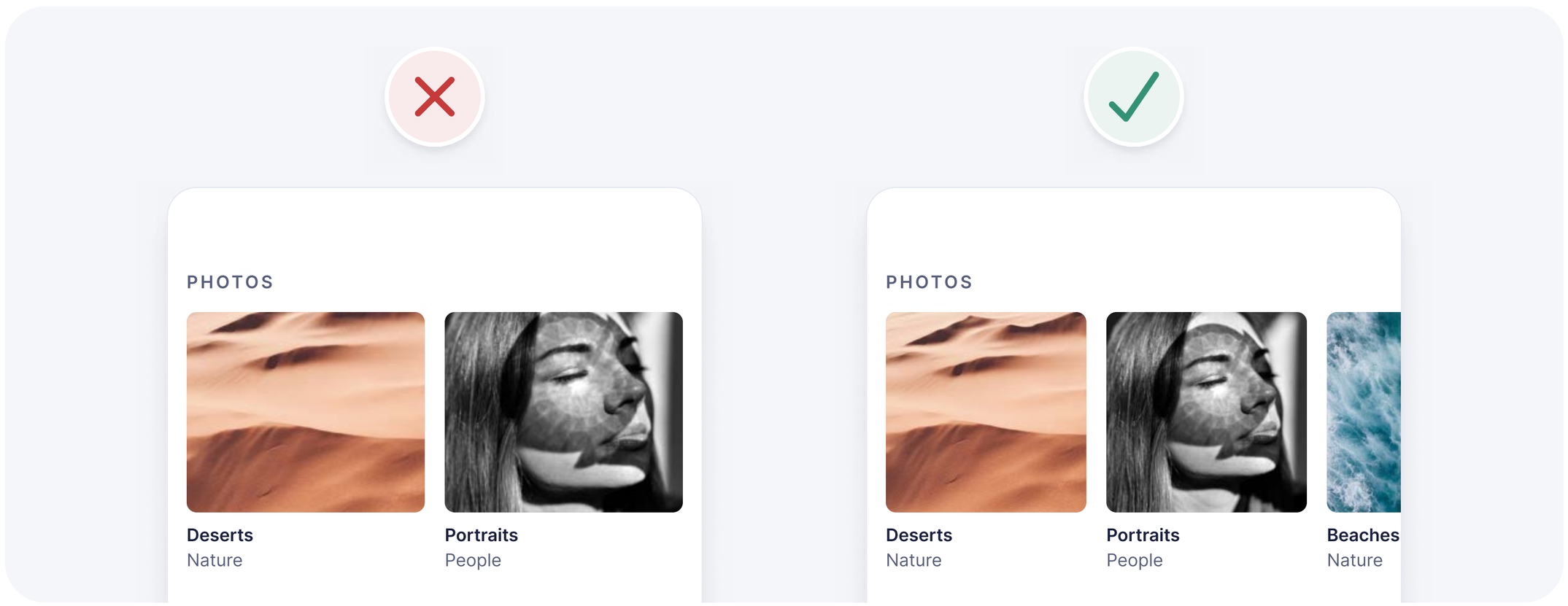
Make sure important content is visible

People don’t use what they can’t see. Hiding things behind interactive menus is a convenient way to keep an interface clean and minimal, but it’s risky, as some people might miss those things. If there’s space, try to ensure important content and actions are visible when they’re needed.



Example of hidden navigation links versus visible links

If you need to hide content due to space constraints, make sure it’s discoverable. For example, expose the edge of cards that are off screen so that people know they’re there.



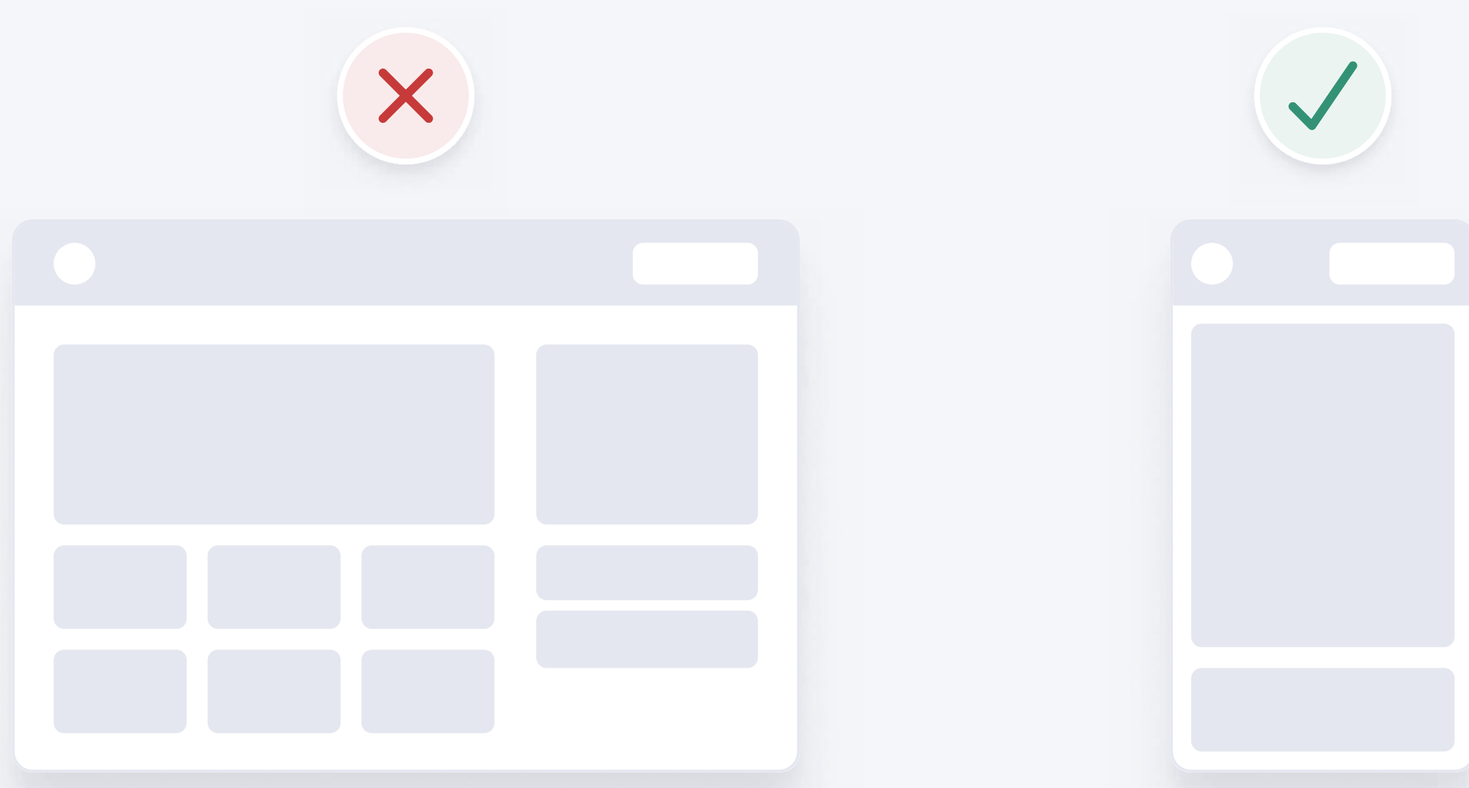
Example of hidden content versus discoverable content

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Design for the smallest screen first

Assuming your product will be used across a range of different screen sizes, start designing on the smallest size first. The restricted space will force you to prioritise important elements and remove unnecessary ones.

This approach should also help ensure your interface is simpler on larger screens too. If you start designing an interface on a large screen first, there's a tendency to want to fill the screen with more information, as there's lots of room. You don't need to fill the screen, as more information can increase cognitive load and slow down decision making.



Desktop first

Mobile first

It's similar to living in a large home compared to a small one. We tend to fill large homes with lots of stuff we don't need. Whereas, in a small one, we have no choice but to be more organised and focused on the essentials.

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Reduce choice to speed up decision making

According to Hick’s Law, the time it takes to make a decision increases with the number and complexity of choices. That means you should aim to present less choices more simply to help people make decisions faster.

There are 4 main ways to do this:

1. Remove choices
2. Group or categorise choices
3. Break up choices into multiple steps
4. Recommend choices

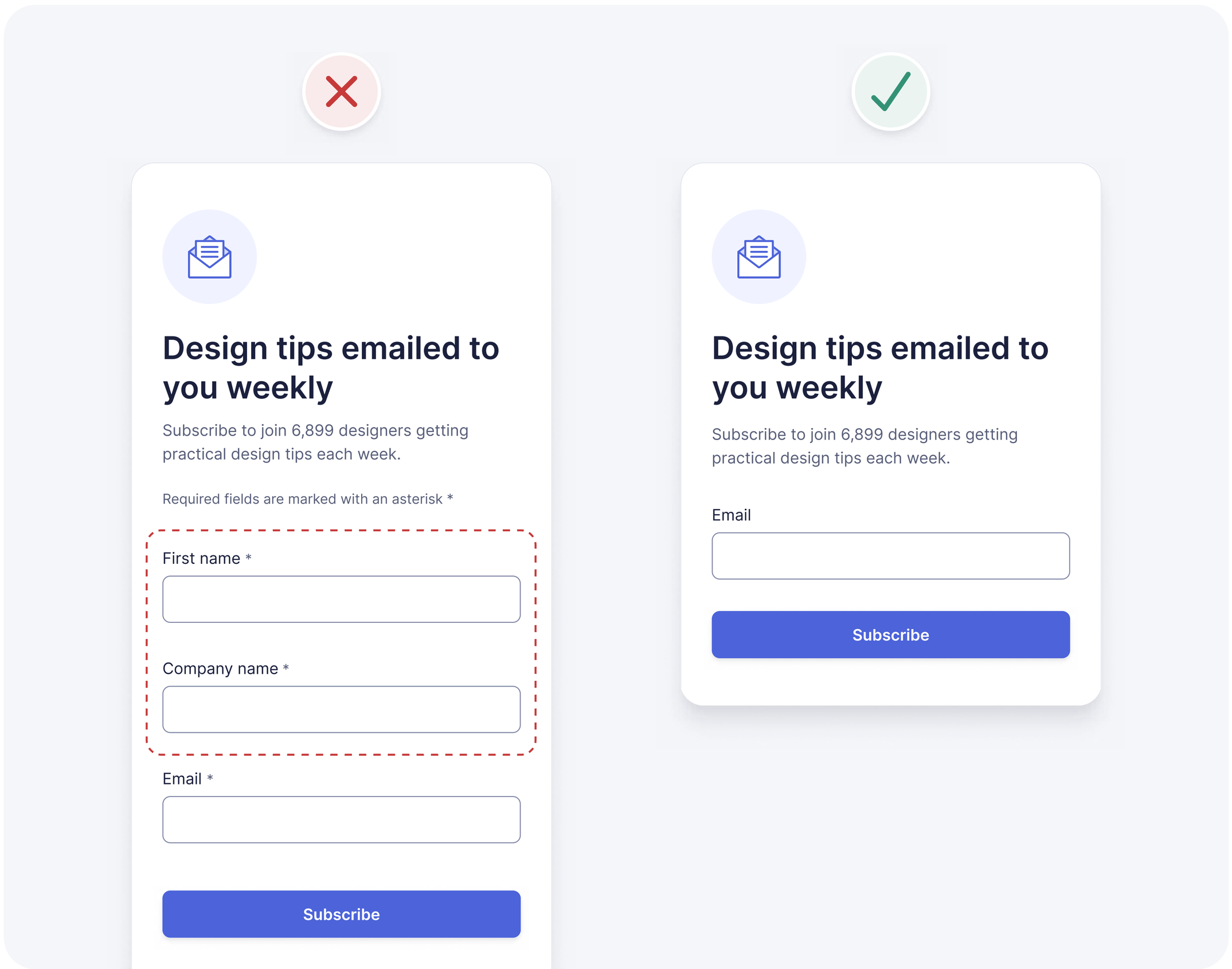
Let’s go through each point in more detail with examples.

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1. Remove choices

The most obvious way to reduce choices is to actually remove them. While this isn’t always possible, it’s good to keep in mind. Whether you’re designing a form, a navigation, or a landing page, make sure that every option earns its place. If it’s not necessary, it’s a potential distraction that you should consider removing.

In the following example, the first 2 fields are removed from the subscription form. This results in a much simpler form that’s faster and easier for people to complete. There’s also a good chance that more people would subscribe, as there’s less work to do and less personal information required from them.



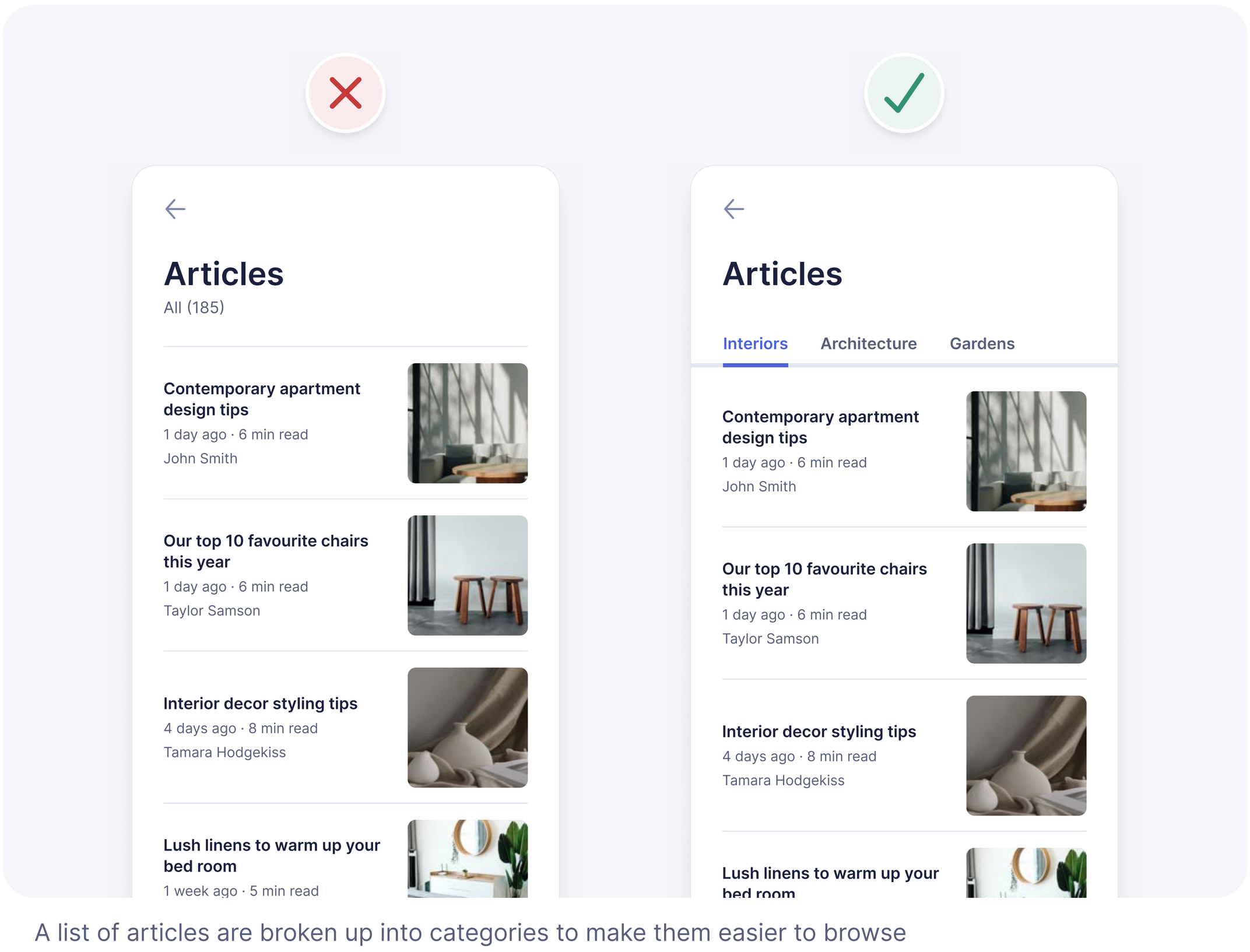
Removing unnecessary form fields can make forms faster and easier to complete

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2. Group or categorise choices

Reduce the number and complexity of choices people need to make by grouping or categorising the options. It’s simpler and faster to decide between a small number of categories than it is to choose an option from a large list.

In the following blog example, the articles are categorised to break them up and make them easier to browse.



A list of articles are broken up into categories to make them easier to browse

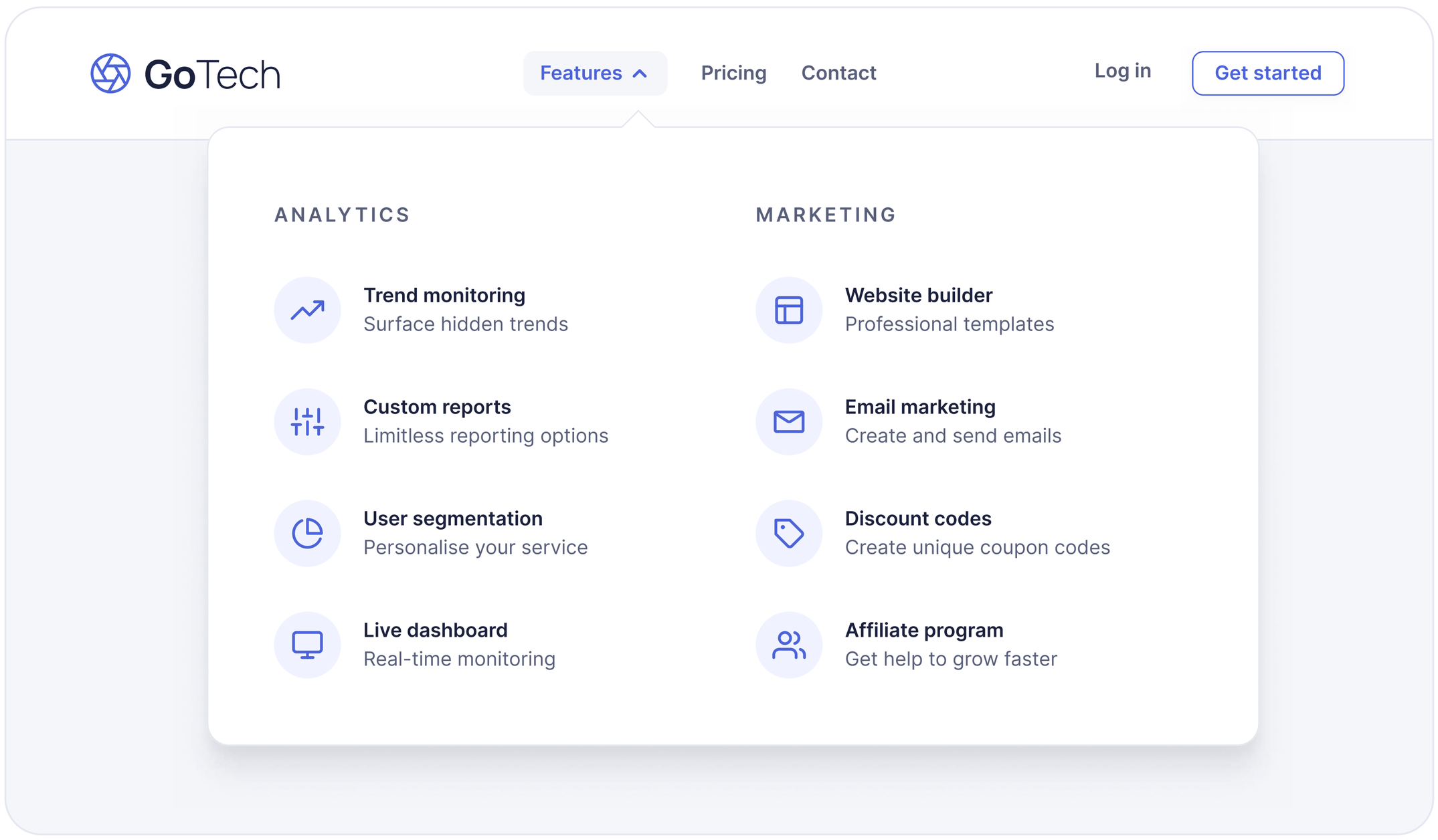
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3. Break up choices into multiple steps

To make large, complex tasks seem less overwhelming, break them up into multiple smaller steps. This decreases cognitive load and allows people to focus on one small thing at a time.

For example:

- Long forms are often broken into multiple steps to simplify them and make them easier to complete.
- Large and complex navigation menus are also broken into multiple levels to help people find what they’re looking for, one decision at a time.



Navigation menu broken into multiple levels

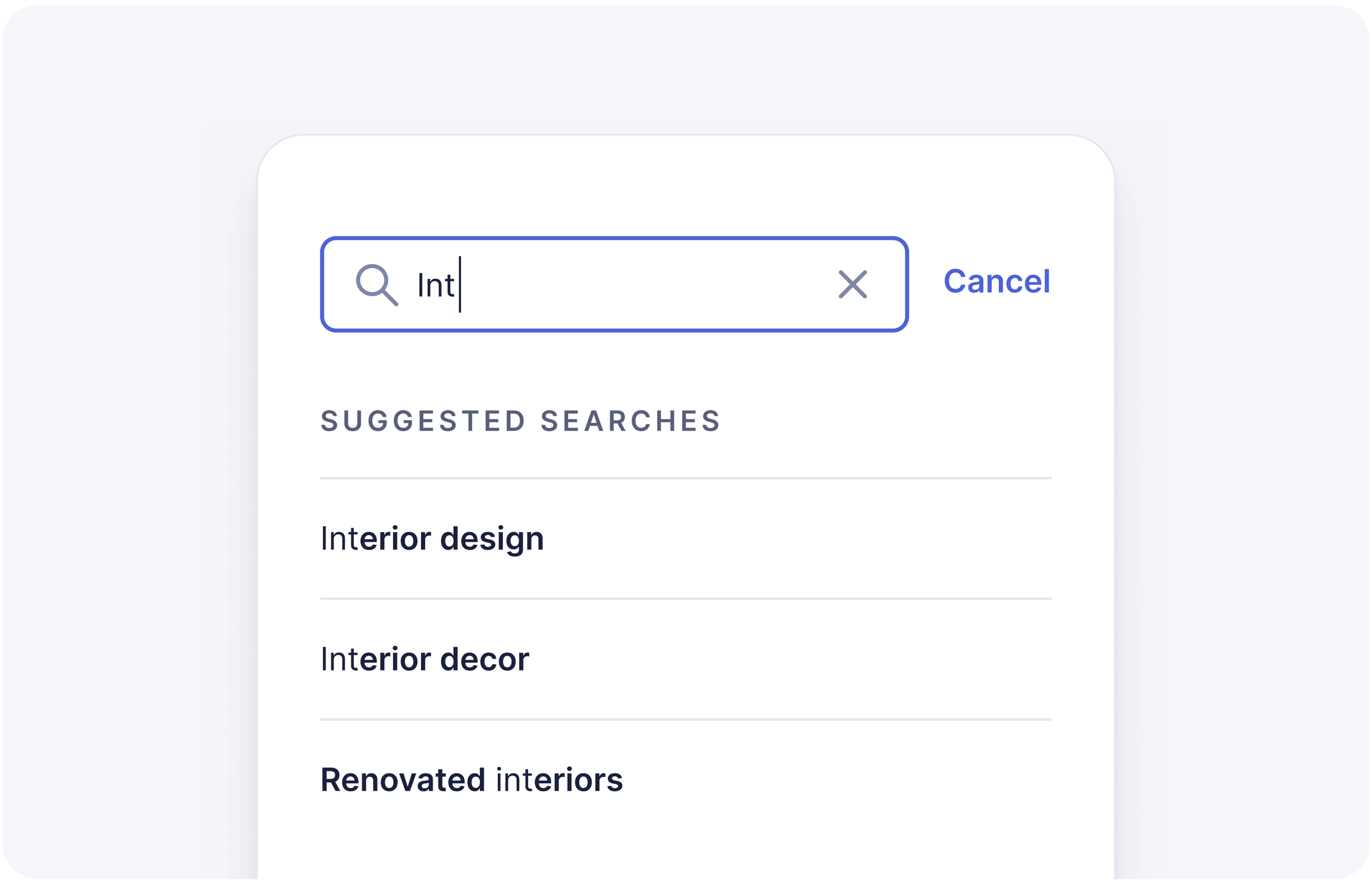
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4. Recommend choices

In some cases, you can make decisions easier for people by recommending popular or common choices. If a lot of people prefer certain choices, there's a good chance that others will too.

For example:

- Video streaming websites often recommend popular videos.
- Search boxes often suggest common search terms to help people narrow down their search faster.



Suggested search terms help people narrow down their search faster

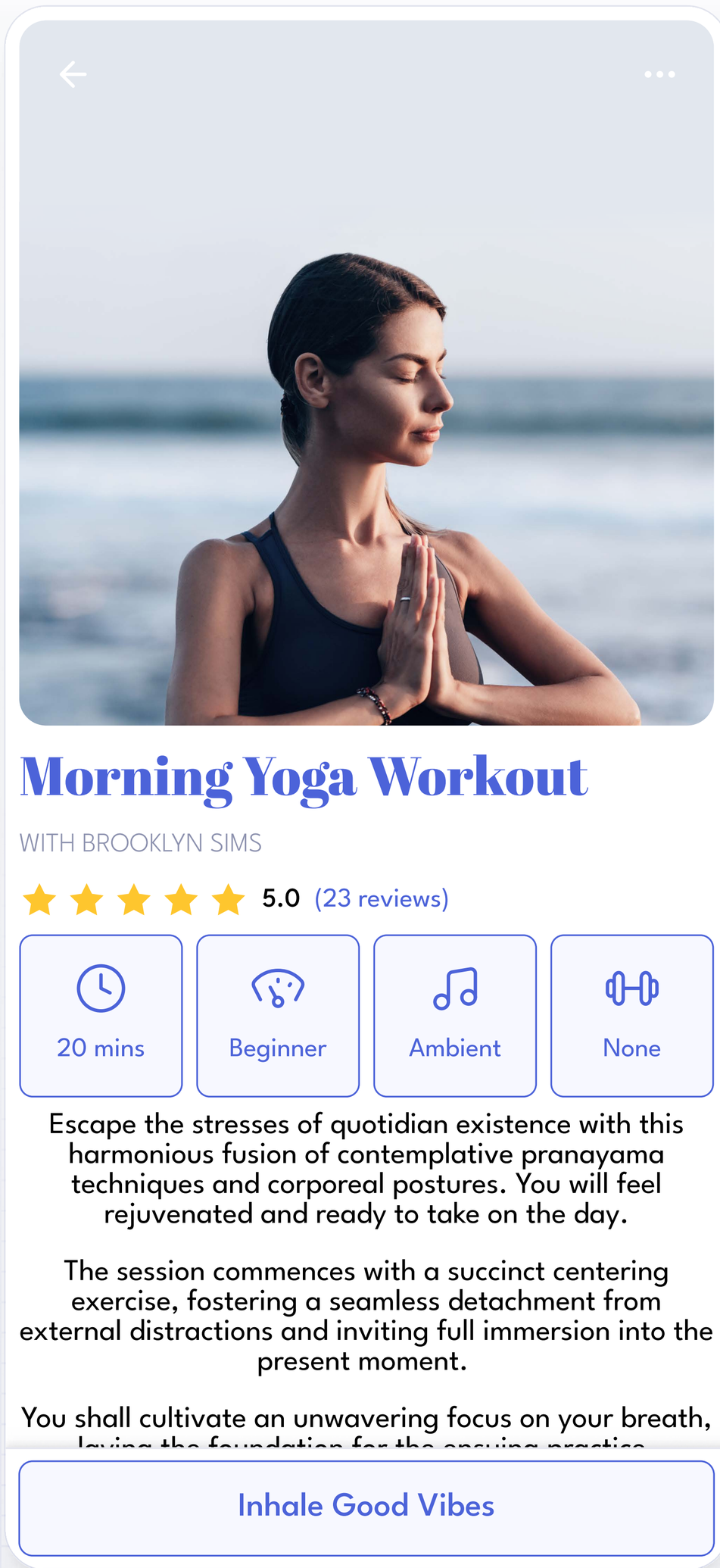
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TUTORIAL - LESS IS MORE

Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off

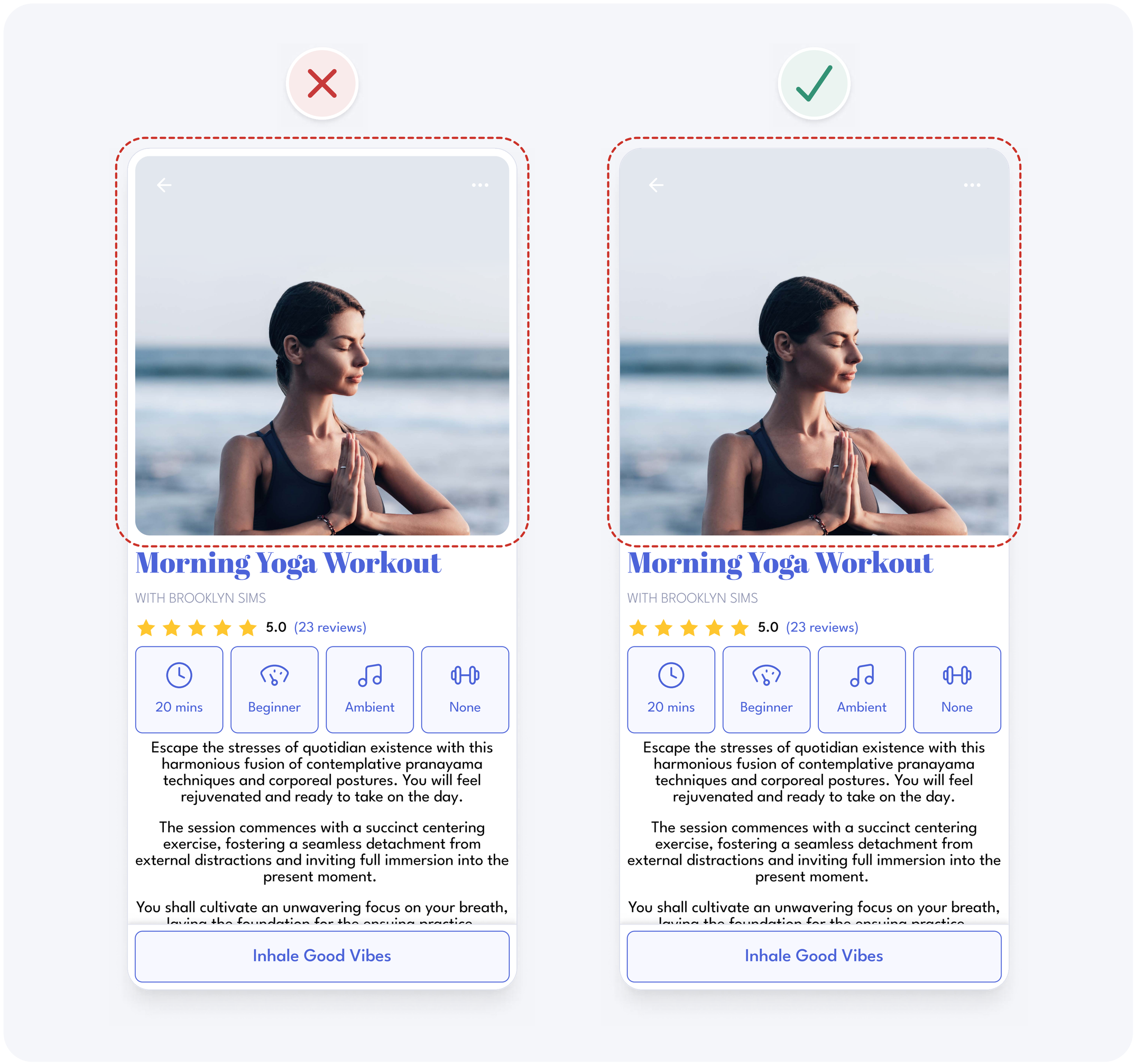


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Remove unnecessary styles

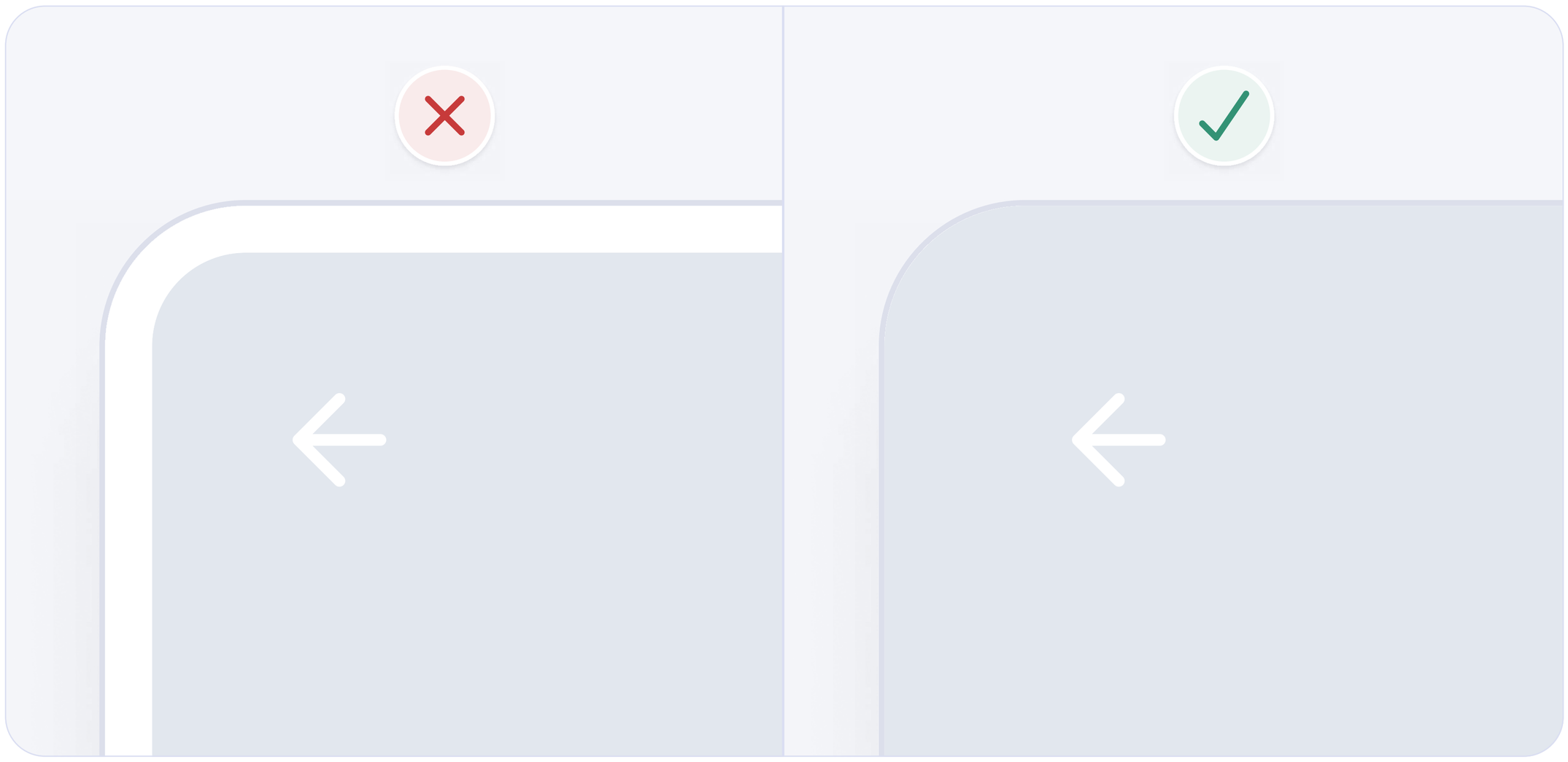
Unnecessary information and visual styles can be distracting and can increase cognitive load. Avoid unnecessary lines, colours, backgrounds, and animations to create a simpler, more focused interface.

In the fitness app example, the white space around the photo adds unnecessary visual complexity. It’s not needed to convey information or group elements, so you can safely remove it to simplify the design.



White space around the photo is removed to reduce complexity

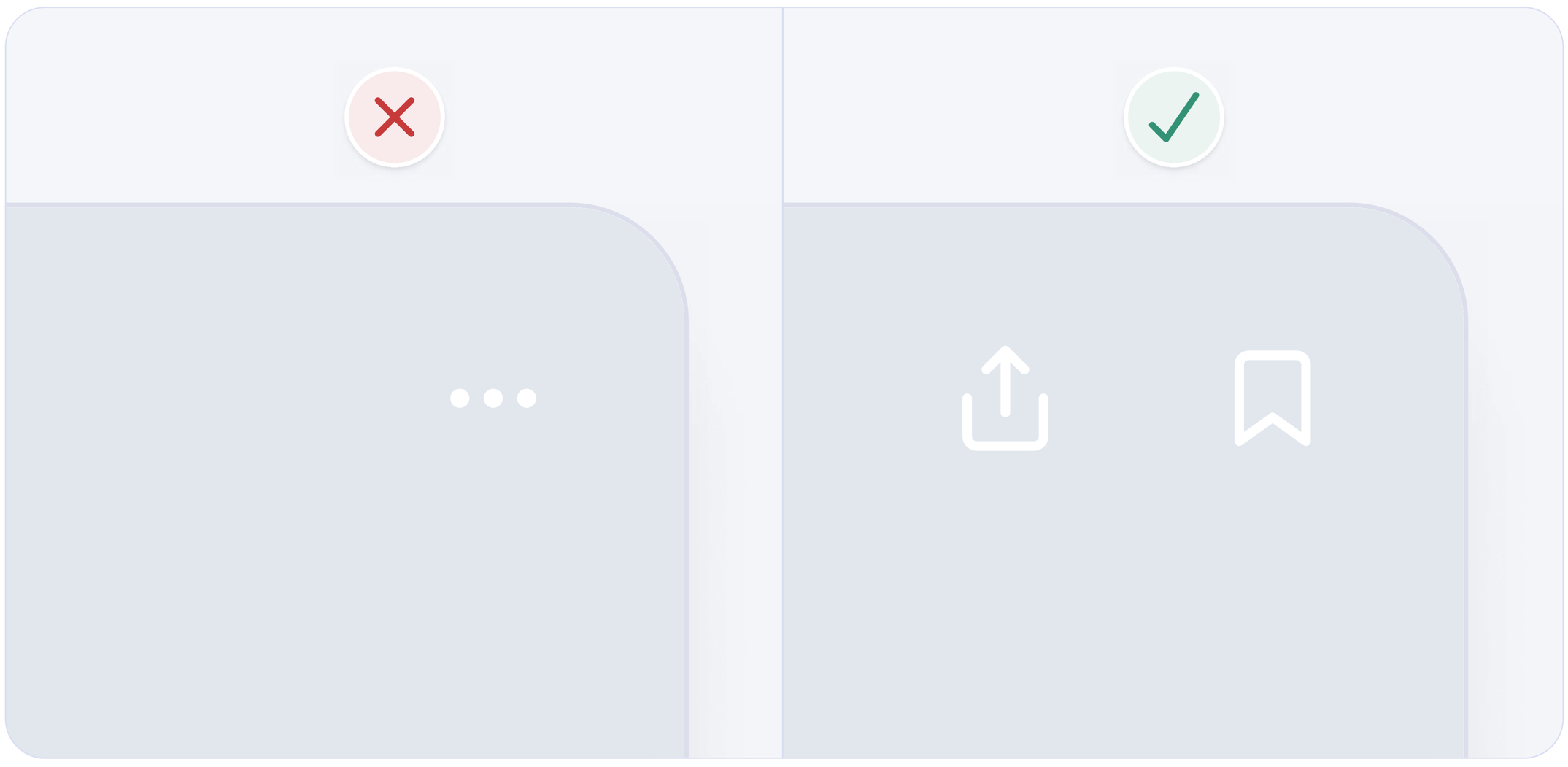
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White space around the photo is removed to reduce complexity

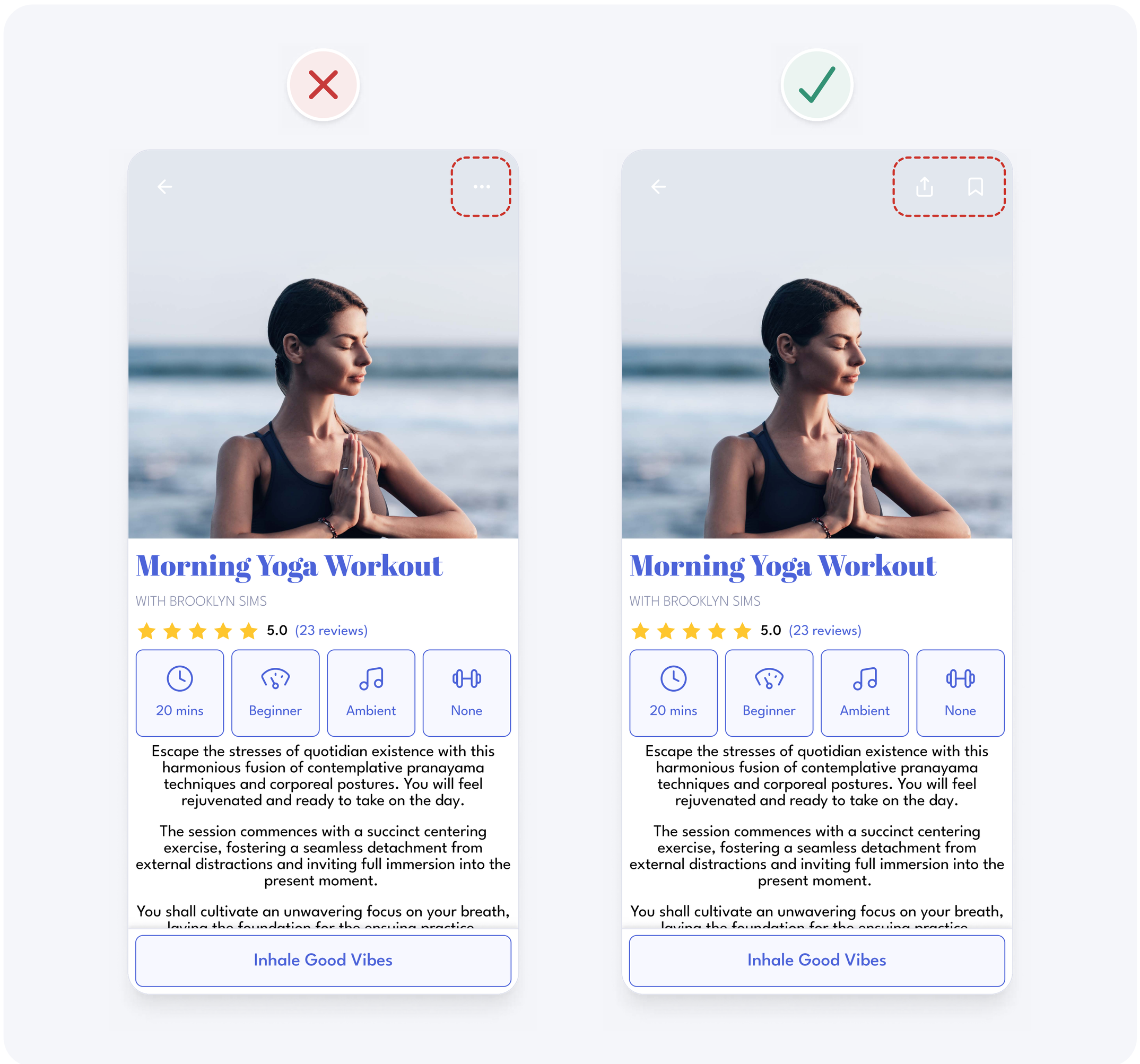
Make sure important content is visible

In the fitness app example, actions are hidden inside an interactive menu to help declutter the design. While it looks clean and minimal, there’s a risk that some might miss the actions. Since there’s space to display the 2 actions, “share” and “bookmark”, keep them visible to help ensure they’re not missed.



Actions are made visible, rather than being hidden inside an interactive menu.

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Actions are made visible, rather than being hidden inside an interactive menu.

Well done. The example app is getting there bit by bit. User interface design is often about removing what's unnecessary to highlight what's important. I hope you're starting to see how following a system of logical guidelines can help you efficiently make informed design decisions. We'll continue improving the example fitness app at the end of each chapter.

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Chapter summary

- Remove unnecessary information and styles to reduce cognitive load.
- Reveal information gradually, rather than all at once, so that people don’t get overwhelmed. This also speeds up decision making.
- Minimal doesn’t necessarily mean simple. Make sure you’re not removing critical information or details simply to improve aesthetics.
- Ensure important content is visible or discoverable to reduce the risk of it being missed.
- To help people make decisions faster, consider removing choices, grouping them, breaking them up into multiple steps, or offering informed recommendations.

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Your progress

2 of 8 chapters completed



Fundamentals

Less is more

3 Colour

4 Layout and spacing

5 Typography

6 Copywriting

7 Buttons

8 Forms

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CHAPTER 3

Colour

Learn how to use colour sparingly and purposefully to add meaning to an interface

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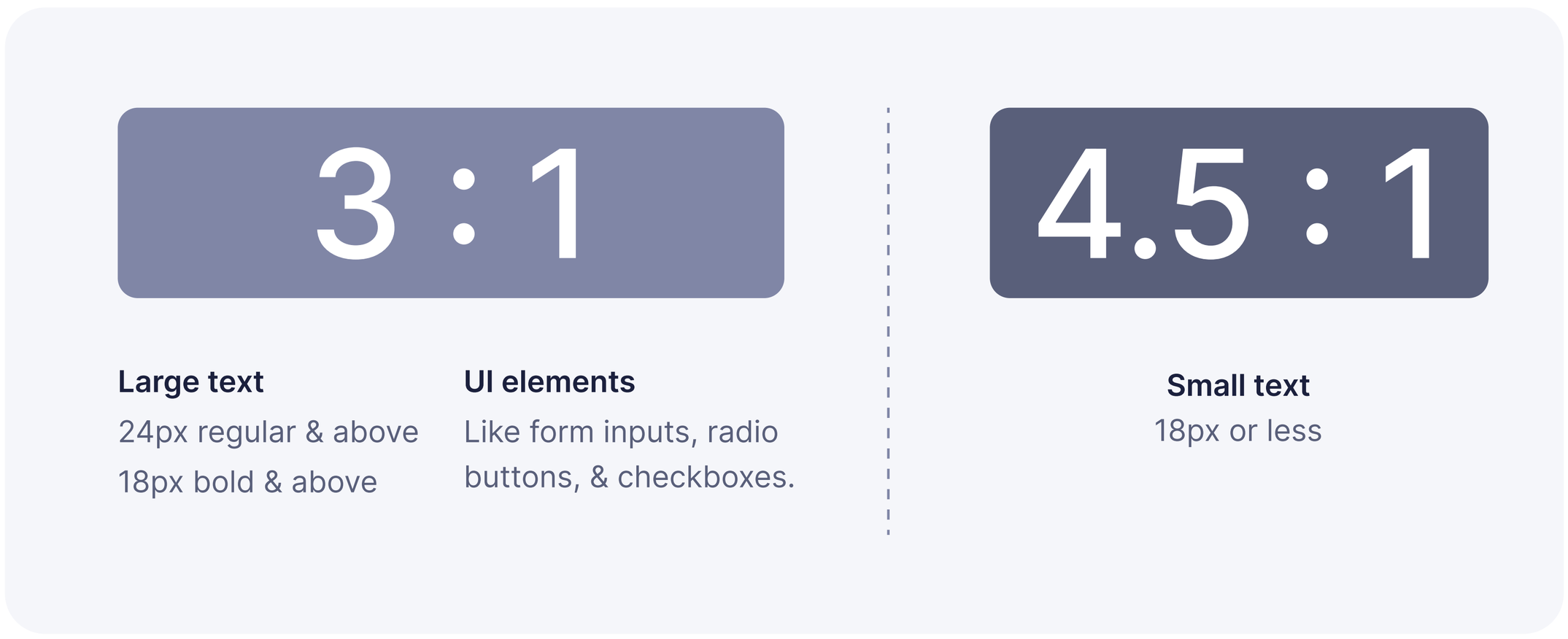
Ensure sufficient contrast

Contrast is a measure of the difference in perceived brightness between two colours. It’s expressed as a ratio ranging from 1:1 to 21:1. For example, black text on a black background has the lowest 1:1 contrast ratio, whereas black text on a white background has the highest 21:1 ratio. There are many online tools to help you measure contrast ratios between different colours.

In order to help ensure that people with low vision can clearly see interface details, aim to at least meet Web Content Accessibility Guidelines (WCAG) 2.1 level AA colour contrast requirements.

There are 2 important contrast ratios you need to remember:

- **3:1** - Minimum for large text (above 18px with bold weight or above 24px with regular weight) and user **interface elements** (like form fields). Decorative elements and styles that don’t convey meaning don’t need to meet this contrast ratio.
- **4.5:1** - Minimum for small text (18px or less).

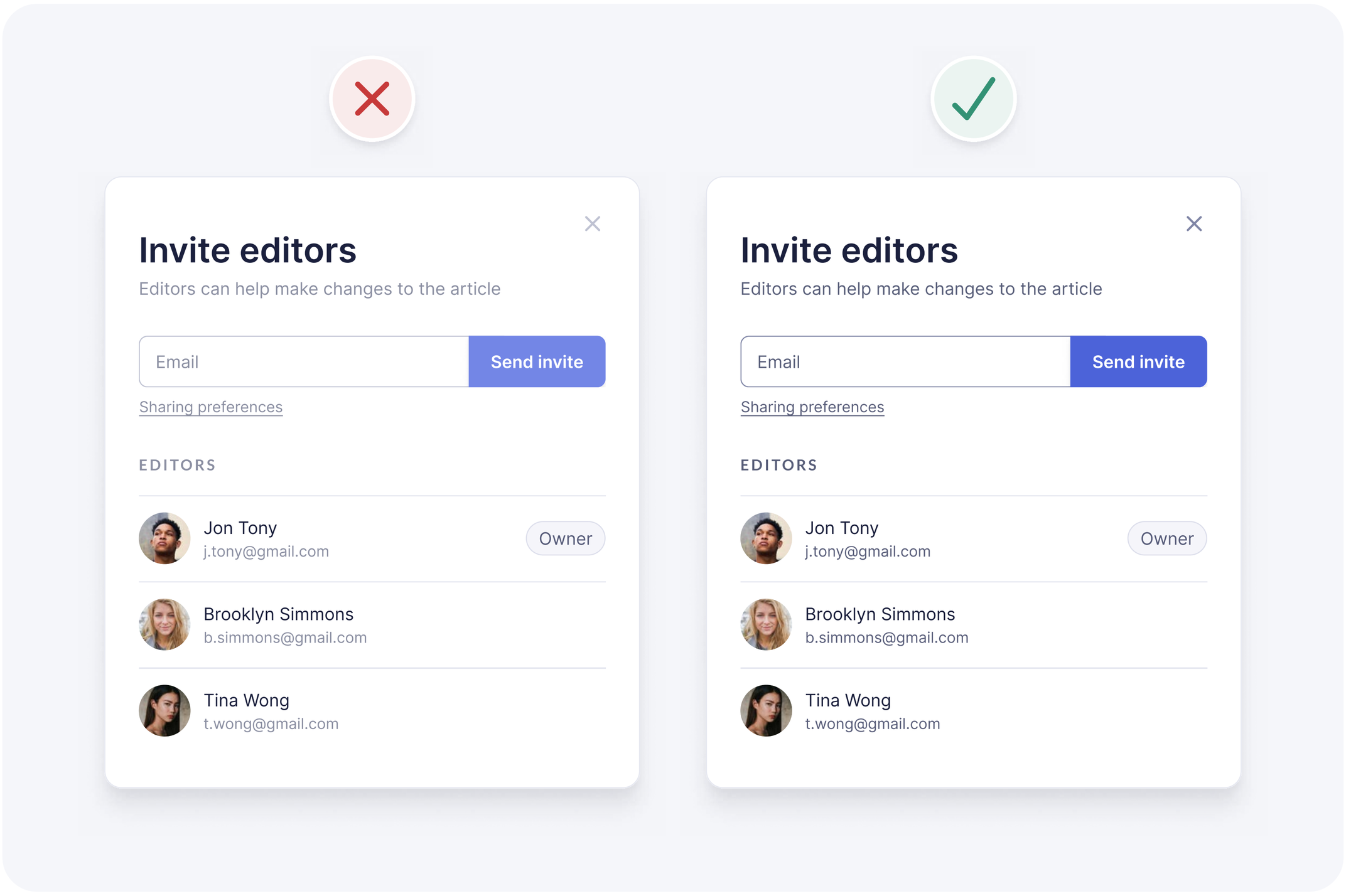


WCAG 2.1 level AA colour contrast requirements

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The following example isn’t accessible to people with low vision, as certain elements lack sufficient contrast:

- Close icon contrast is less than 3:1.
- Secondary text contrast is less than 4.5:1.
- Search field border contrast ratio is less than 3:1.
- Placeholder text in the search field is less than 4.5:1.
- Button background contrast against white text is less than 4.5:1.
- Link text contrast is less than 4.5:1.



Low contrast interface versus a high contrast interface

You’ll learn how to avoid colour contrast issues by creating an accessible set of predefined colour options later in this chapter.

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An improved way to measure contrast

There’s a new and improved way to measure contrast using the Accessible Perceptual Contrast Algorithm (APCA). It’s part of the WCAG 3 draft and it helps solve some of the limitations of the WCAG 2 method.

In the following example, white text on an orange background fails WCAG 2, while black text passes. This doesn’t make sense, as the white text is clearly easier to read. Using APCA, the white text passes and the black text fails. This matches our actual perception of the text.

	Easier to read	Harder to read
	Button	Button
WCAG 2	3.04 : 1 Fail	4.5 : 1 Pass
APCA	62 Pass	43 Fail

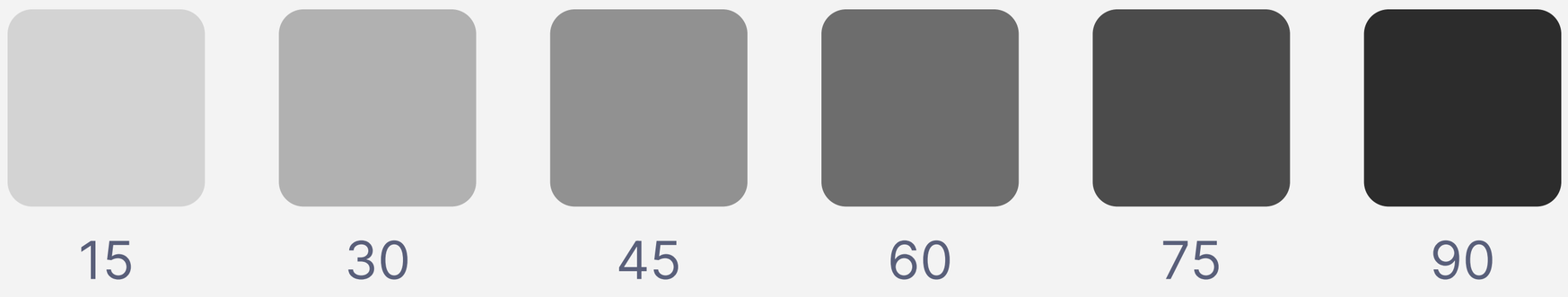
Limitations of the WCAG 2 method

The new APCA system is a bit more complex, but a lot more practical, especially for interfaces with a dark background. Let’s quickly go through how it works.

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No more ratios

Rather than ratios, APCA contrast is measured in numbers. The higher the number, the higher the contrast. The APCA contrast value also depends on the size and weight of text. Smaller and thinner text gets a lower score.



APCA key contrast values for neutral grey

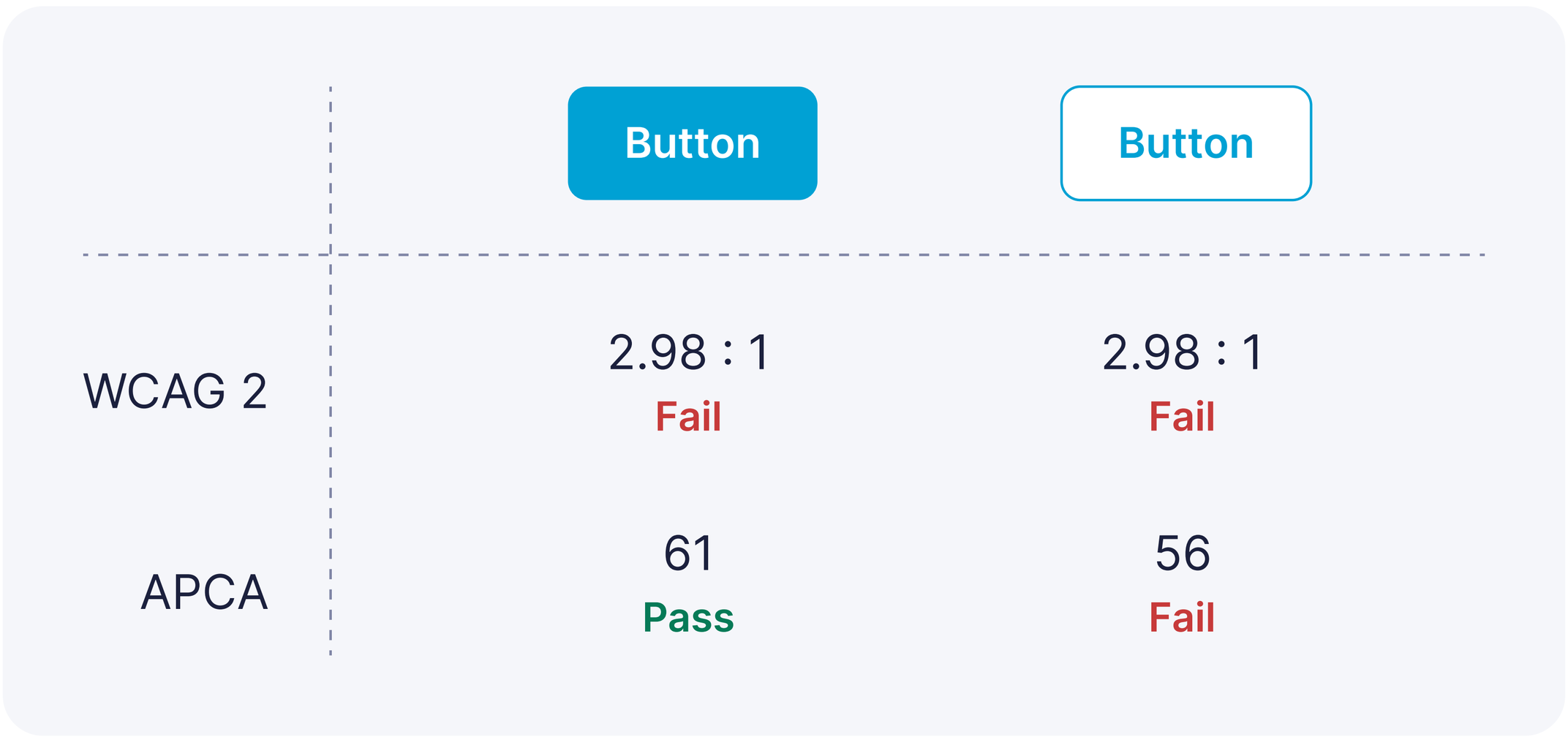
Here’s a summary of the APCA contrast guidelines:

- **90** - Preferred for body text (14px regular and above).
- **75** - Minimum for body text (18px regular and above).
- **60** - Minimum for other text (24px regular or 16px bold and above).
- **45** - Minimum for large text (36px regular or 24px bold and above) and interface elements.
- **30** - Absolute minimum for text like form field placeholder text and disabled button text.
- **15** - Minimum for non-text elements.

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Swapping text and background colours affects contrast

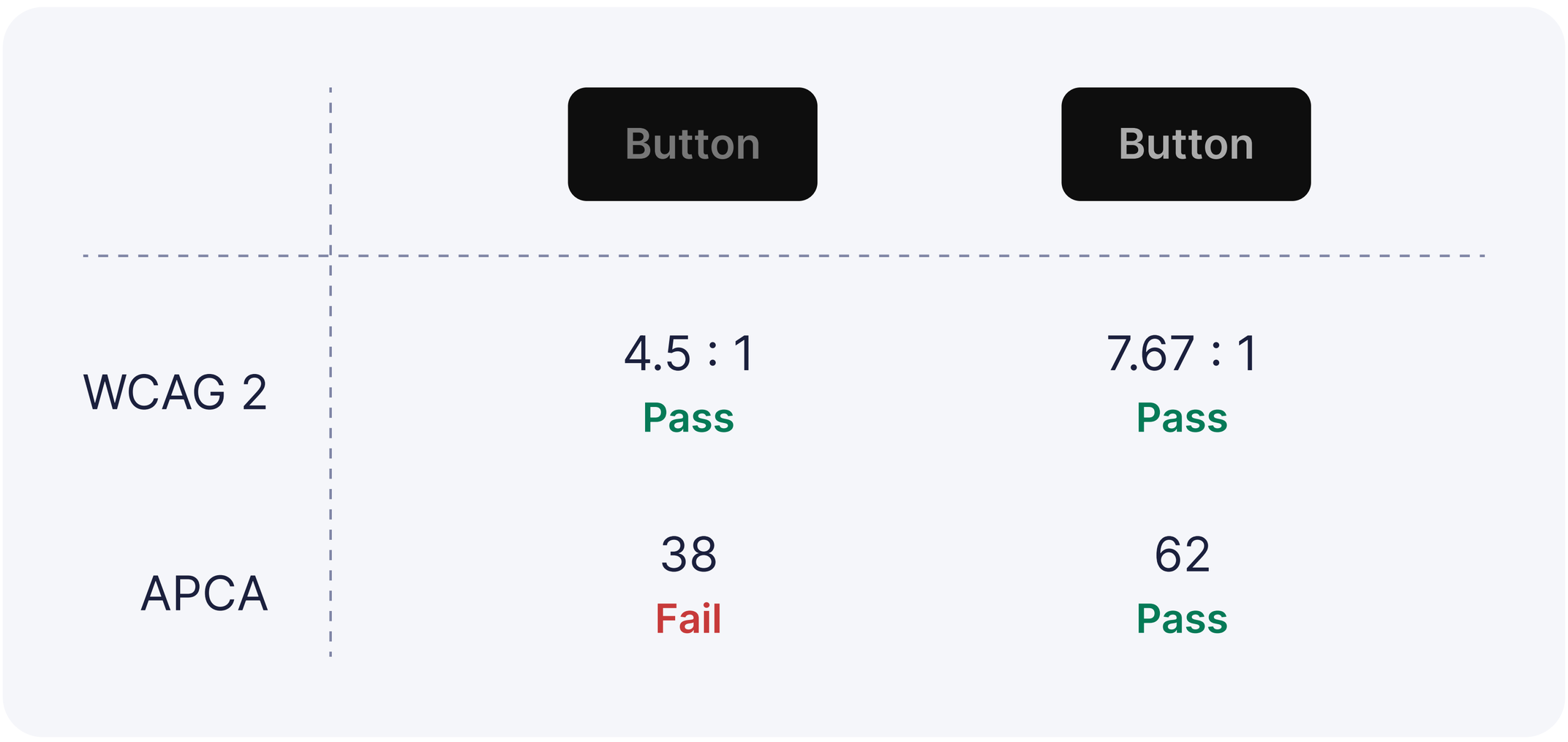
The APCA contrast measurement differs depending on whether the colour is being used on text or a background. For example, white text on a blue background passes, while blue text on a white background doesn’t.



White text on a blue background passes, but blue text on a white background doesn’t.

Better for dark interfaces

Unlike APCA, WCAG 2 contrast requirements don’t work well for interfaces with dark backgrounds. It results in text that’s hard to read.



Button text on a dark background passes WCAG 2 but is difficult to read

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Should I start using APCA?

If you're working on a personal project, start using APCA, as it results in a more accessible interface. It's also easier to comply with contrast requirements, as it fixes many of the issues with WCAG 2.

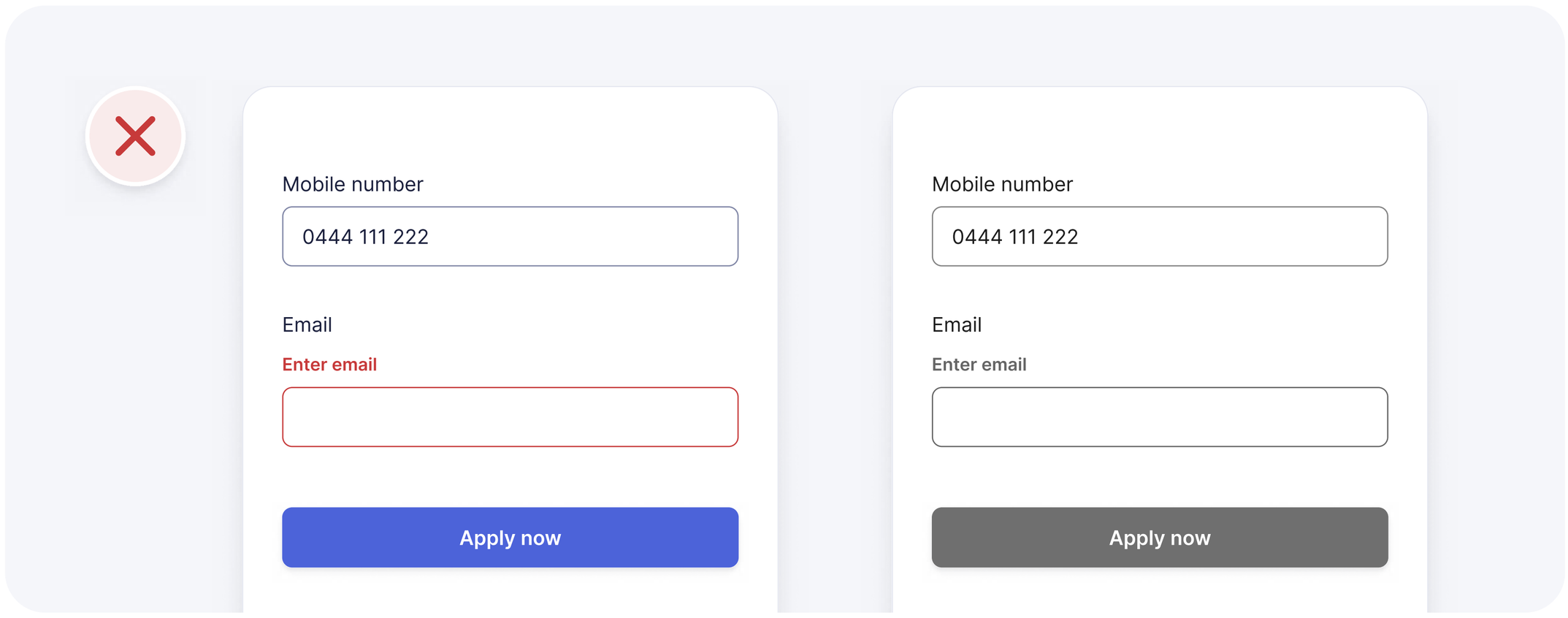
For commercial projects, where accessibility compliance is a requirement, it's safest to stick with WCAG 2 until WCAG 3 is released. That being said, you should try to ensure your contrast passes both for optimal results.

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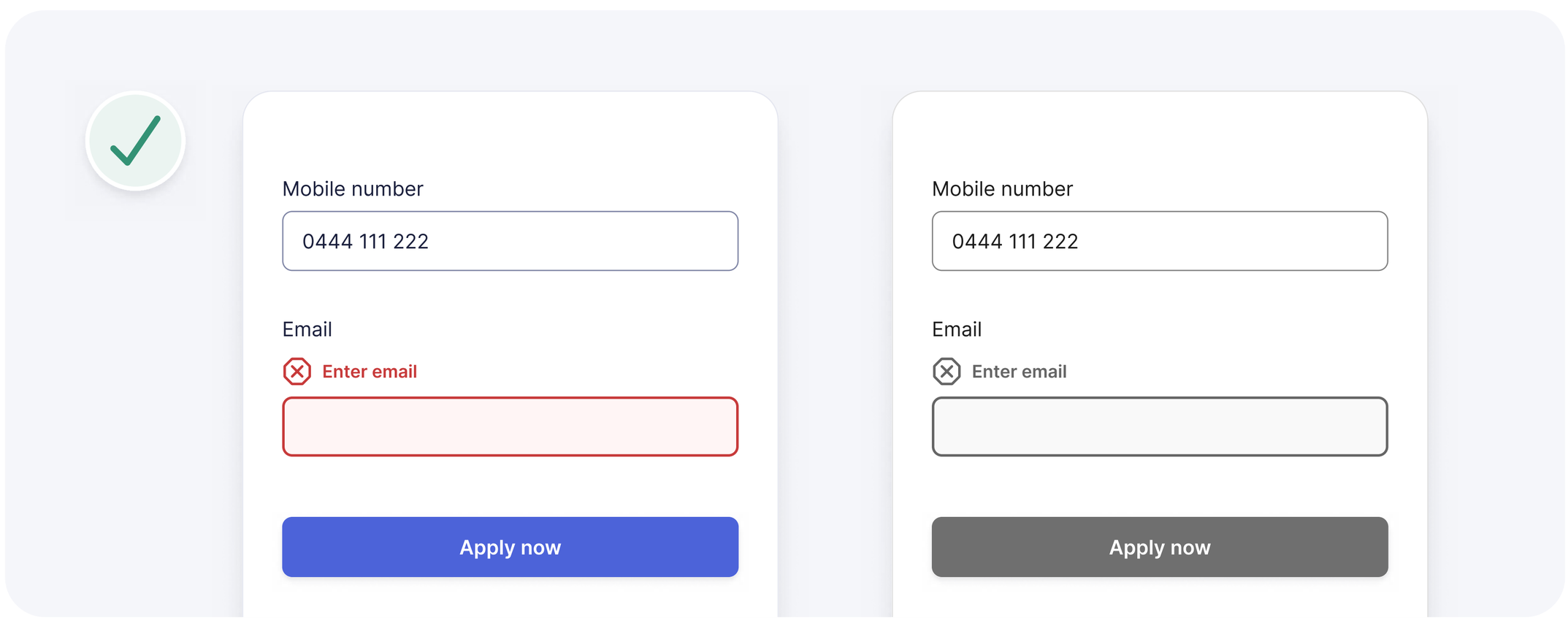
Don’t rely on colour alone to convey meaning

There are many different types of colour blindness and they mainly affect men. Commonly, people who are colour blind have difficulty distinguishing between red and green, but some aren’t able to see any colour at all.

To ensure an interface is accessible to those who are colour blind, you can’t rely on colour alone to convey meaning or distinguish visual elements. You need to use additional visual cues to differentiate interface elements.



Colour alone is used to indicate a form error

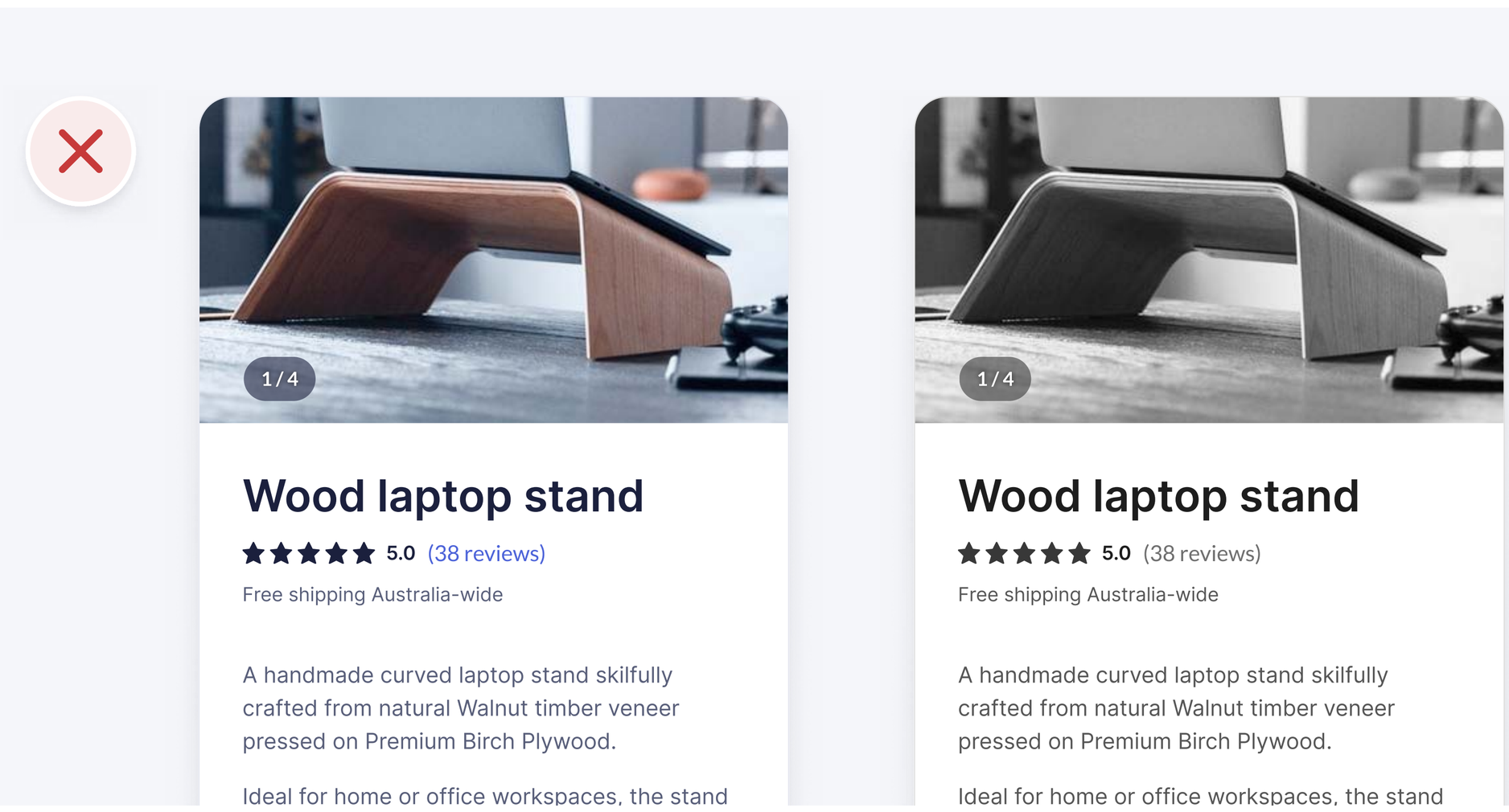


Colour along with an icon, thicker border, and background are used to indicate a form error.

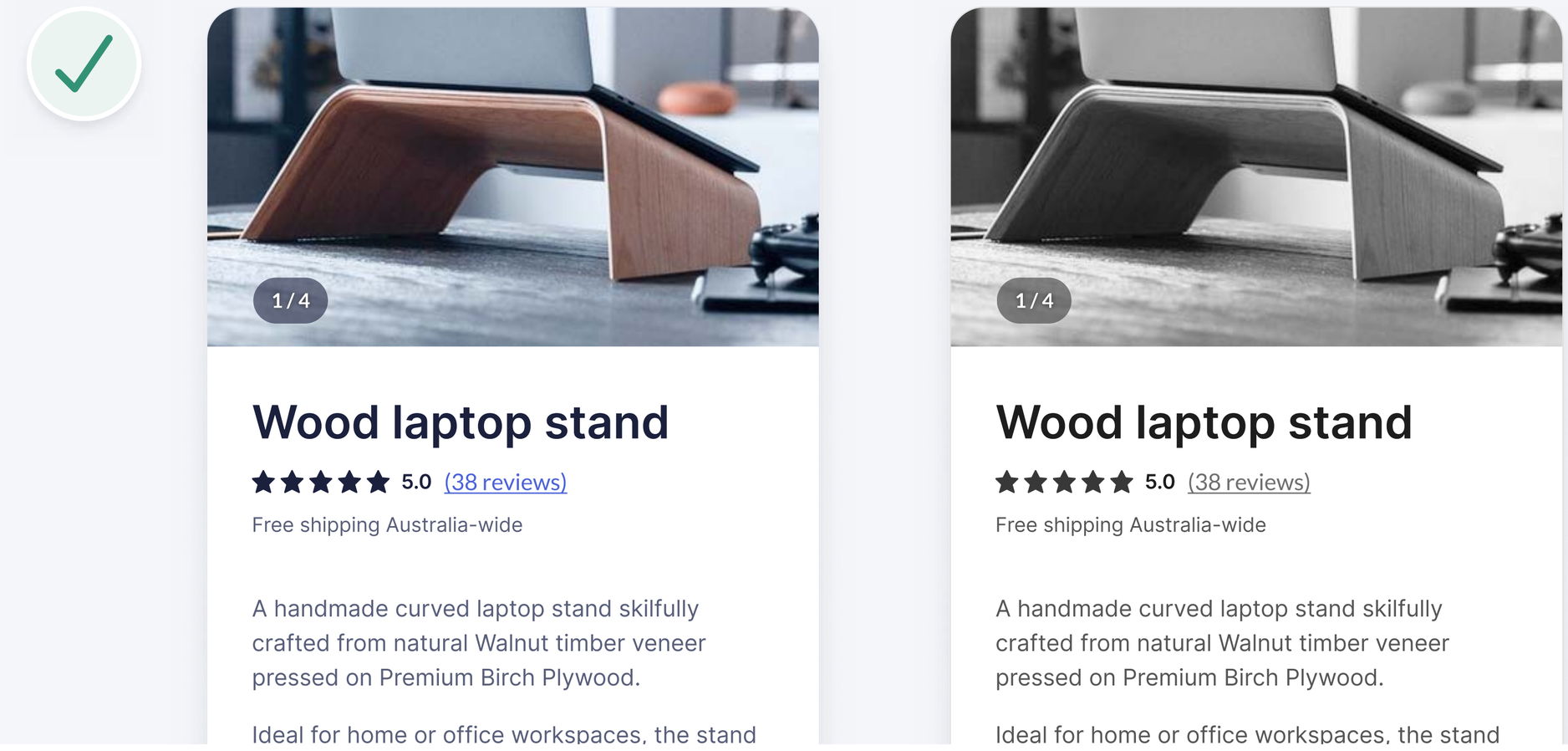
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In the previous example, the colour red is used to indicate an error with a form field. If colour is removed, there's nothing else to differentiate the error field from other form fields. You can fix this by adding an icon, thicker border, and background shade. This also makes the error state more obvious to others who aren't colour blind.

In the next example, the reviews text link is coloured blue to indicate that it's interactive. If colour is removed from the interface, the text link looks the same as other text, so the colour blind can't tell it's a link. You can fix this by underlining the text link to clearly differentiate it from other text.



Colour alone is used to indicate a link is interactive



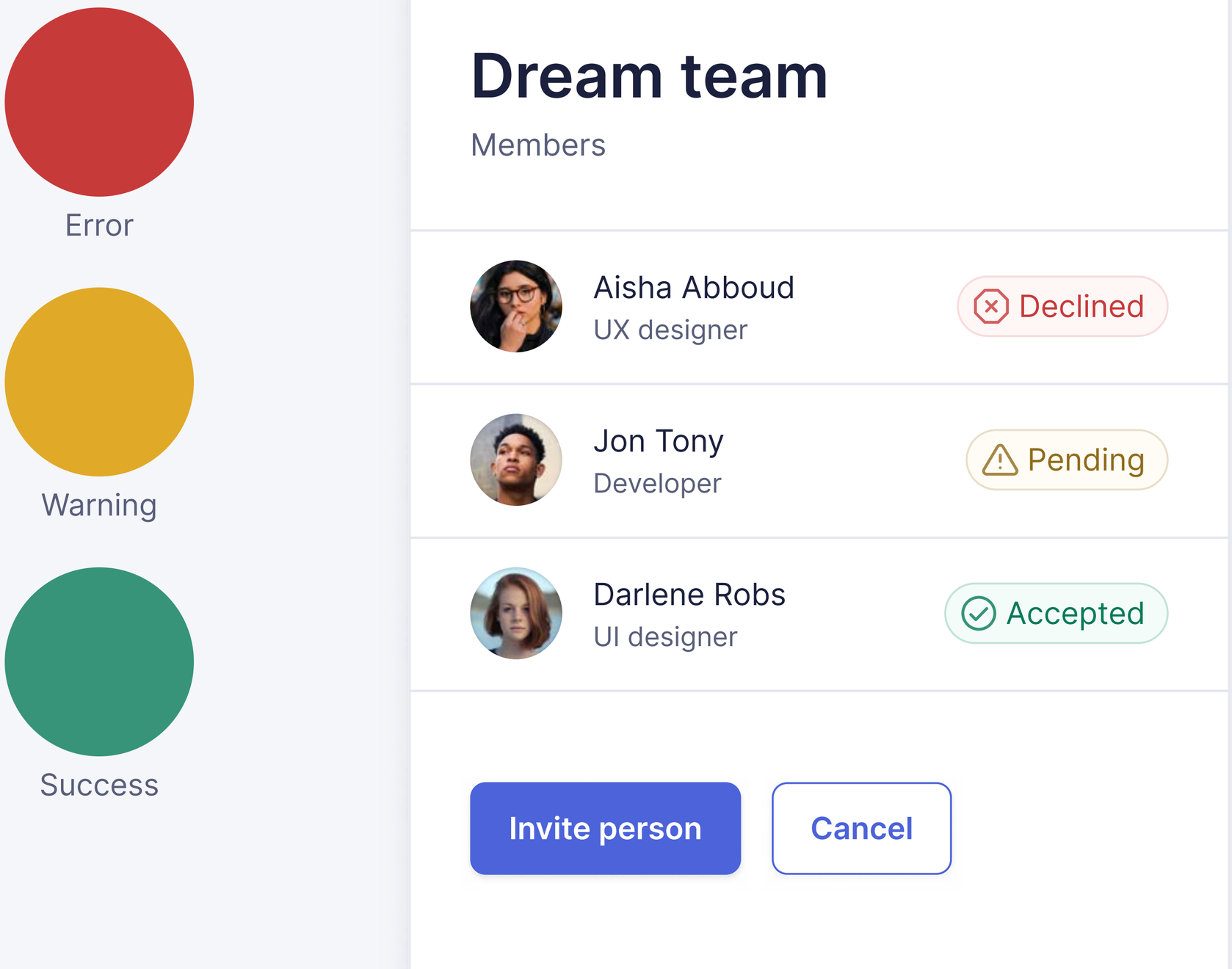
Colour and an underline are used to indicate a link is interactive

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Use system colours to indicate status

You'll generally need 3 system colours to indicate errors, warnings, and success states. Traffic light colours (red, amber, and green) are commonly used for system colours, as they already have familiar meanings associated with them.

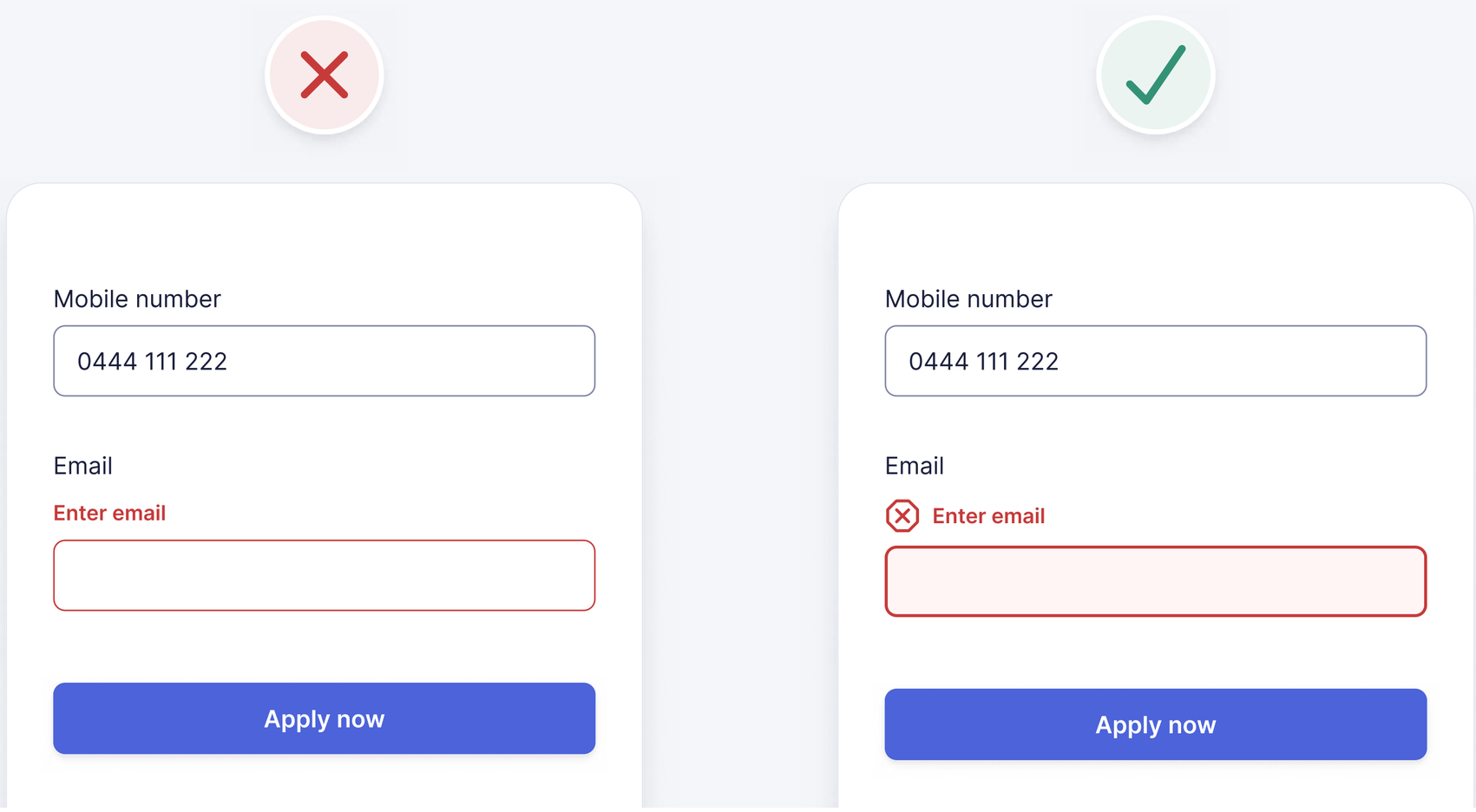
- **Red (error)** - used to indicate a negative message such as an error or system failure that needs urgent attention.
- **Amber (warning)** - used to warn people to be cautious and that taking an action could be risky.
- **Green (success)** - used to indicate a positive message or that an action was completed as expected.



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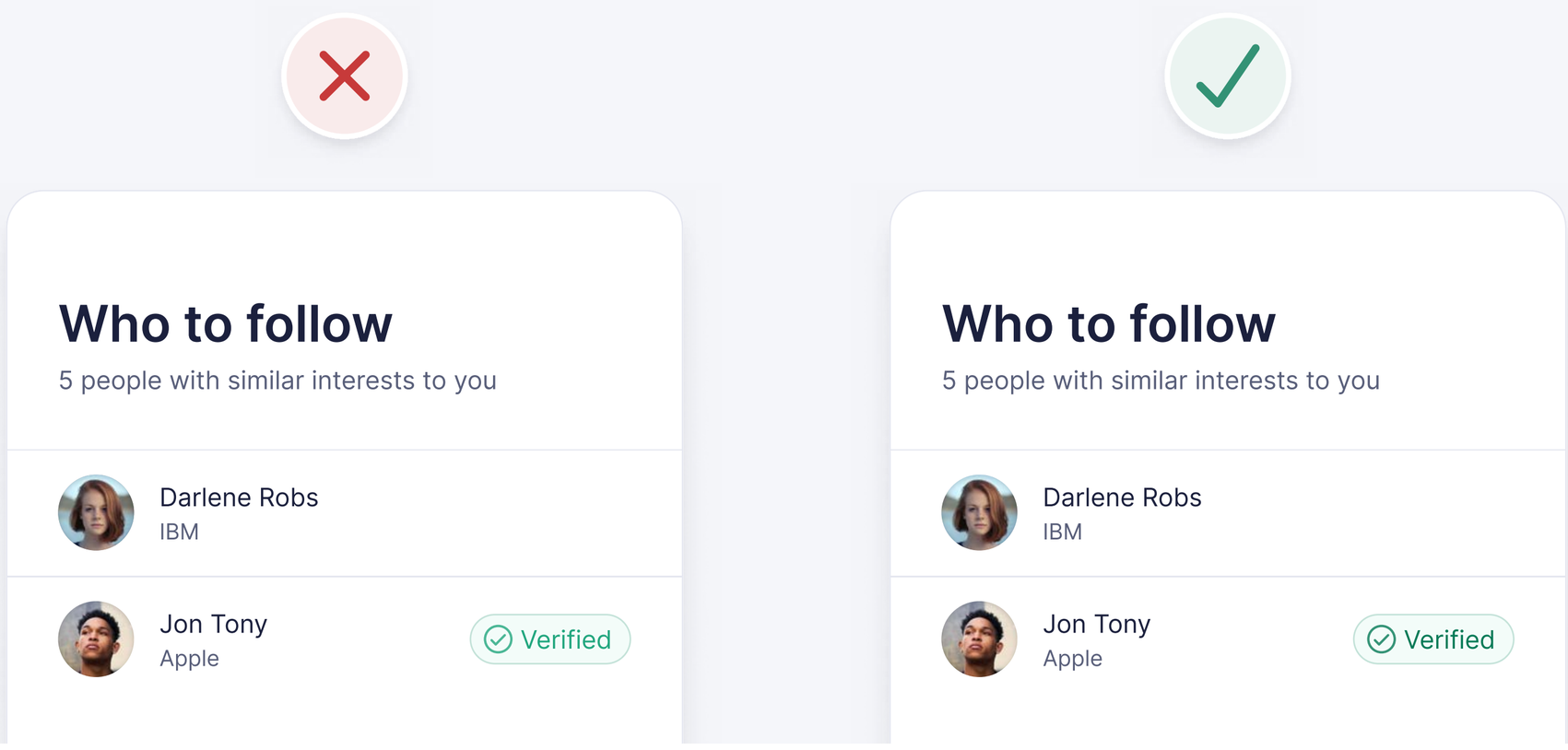
Ensure system colours are accessible

Make sure you don’t rely on system colours alone as indicators. Use additional visual cues such as icons to ensure people who are colour blind can also understand what the system messages mean.



An icon is used as an additional visual cue for an error state

If you’re using system colours for text, make sure they at least have a 4.5:1 contrast ratio. If you’re only using system colours for interface elements and icons, they need a 3:1 contrast ratio.



Low contrast icon and text versus high contrast icon and text

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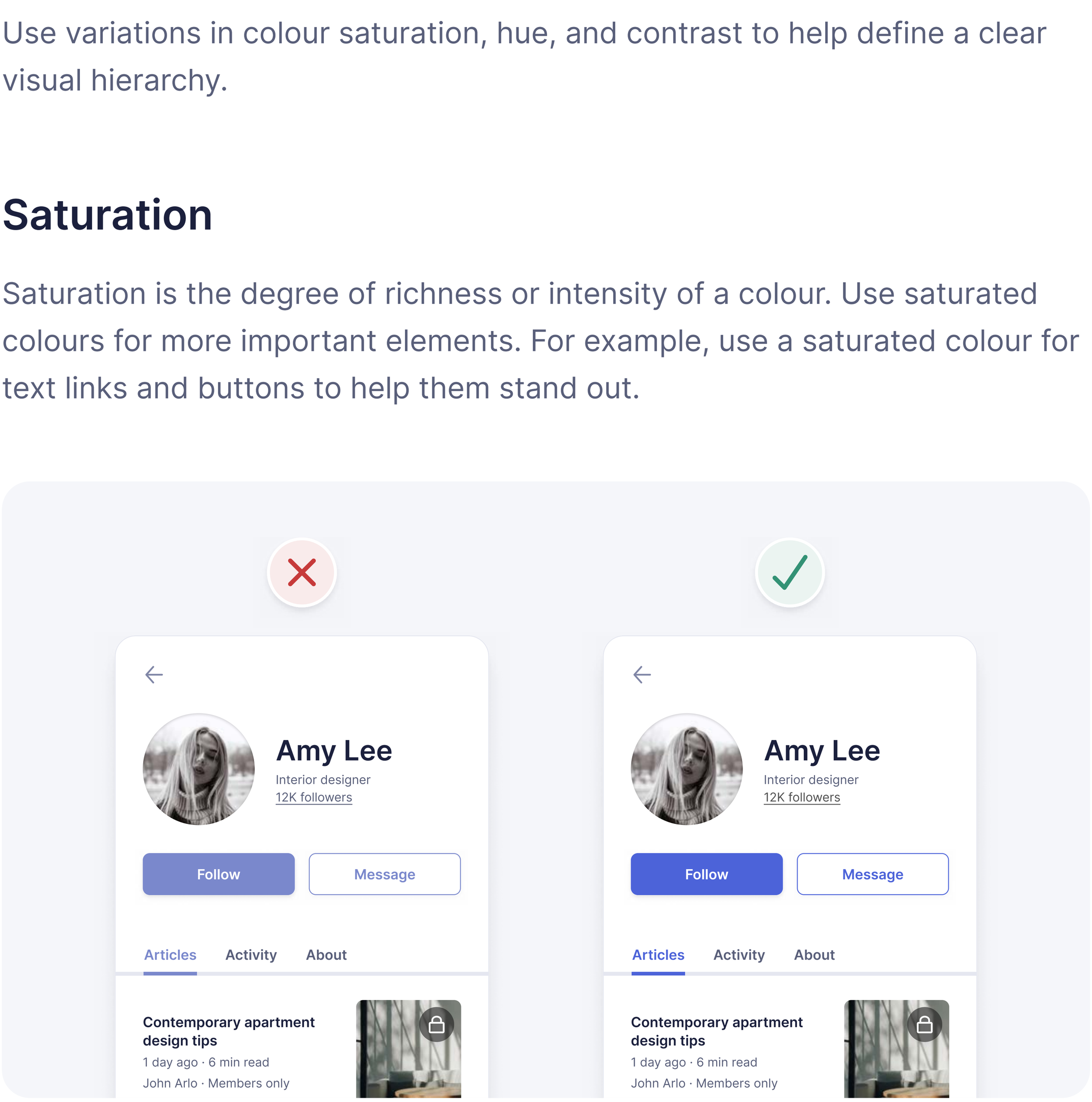
Use colour to define a clear visual hierarchy

Not all information in an interface has the same level of importance. Aim to present information in order of importance by making more important elements look more prominent. A clear order of importance, or visual hierarchy, helps people scan information quickly and focus on areas of interest. It also improves aesthetics by creating a sense of order.

Use variations in colour saturation, hue, and contrast to help define a clear visual hierarchy.

Saturation

Saturation is the degree of richness or intensity of a colour. Use saturated colours for more important elements. For example, use a saturated colour for text links and buttons to help them stand out.

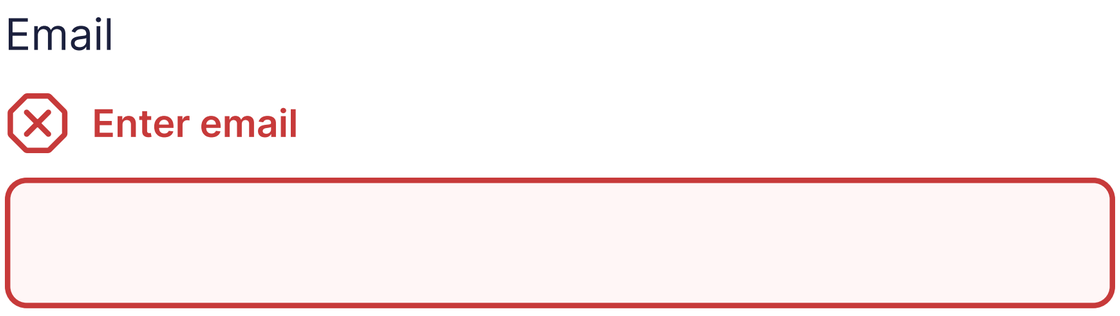


Action colour with low saturation versus one with high saturation

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Hue

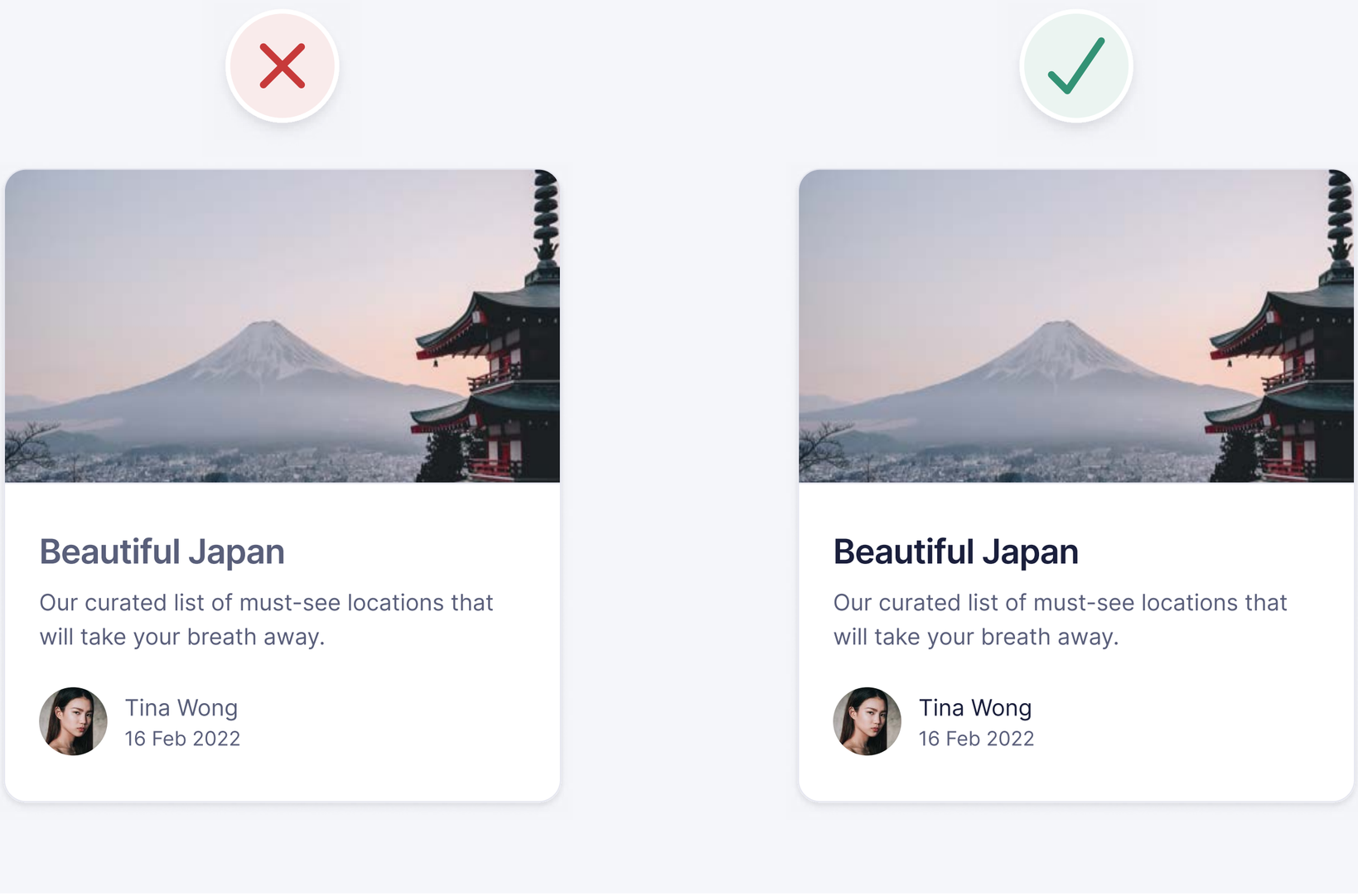
A hue is a number between 0 and 360 degrees that represents the colours of the rainbow. Certain colour hues are more prominent than others and should be used for more important elements. For example, red stands out a lot, which is one of the reasons it's used to indicate urgent errors.



Prominent red form input error message

Contrast

Colour contrast is the difference in brightness between 2 colours. Give more important elements higher contrast to make them more prominent. For example, make headings darker than body text to help them stand out.



Low contrast heading versus high contrast heading

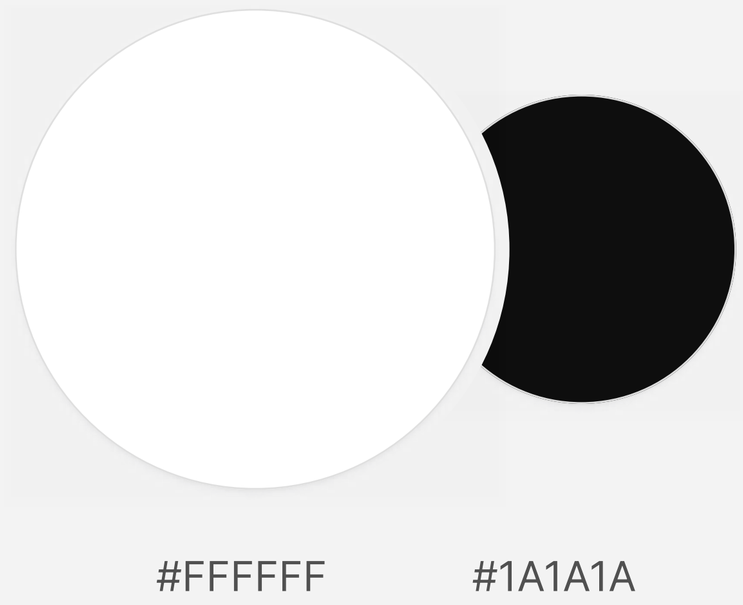
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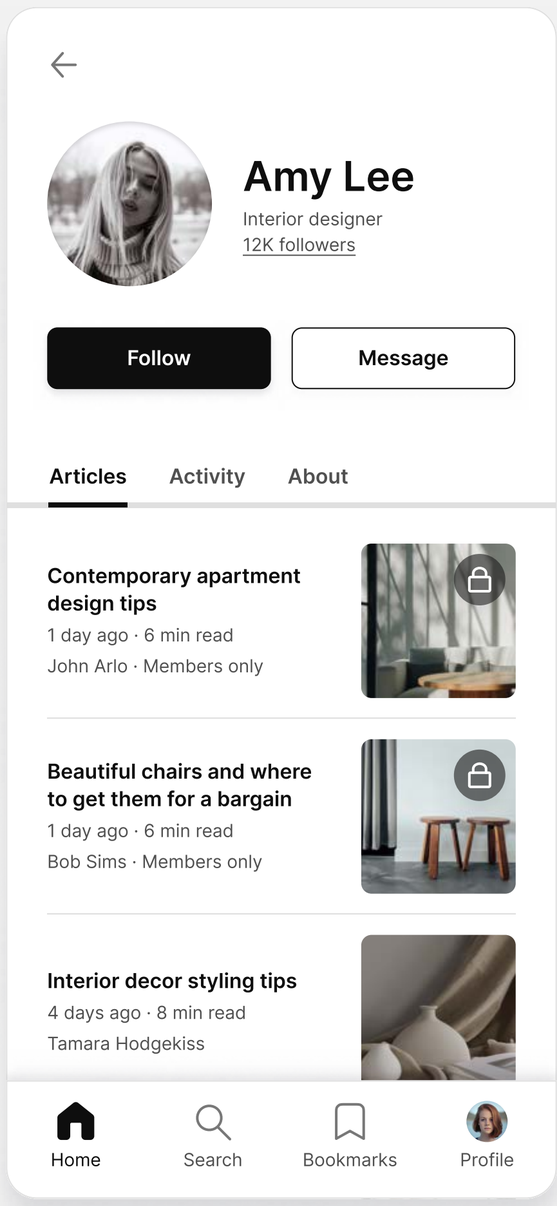
Use black and white for a timeless aesthetic

Many brands avoid colour and use black and white for a timeless look and feel. When I say black and white, I'm also referring to shades of grey. Black and white interfaces are especially good at highlighting content, as there are fewer distractions. Even if your brand has colour, you could still consider designing your interface in black and white.

Black and white are the foundations that most interfaces are built on. It's a good idea to design interfaces without colour first, regardless of the brand colours. Designing in black and white first helps you focus on spacing, size, layout, and contrast, without the extra challenge of colour.

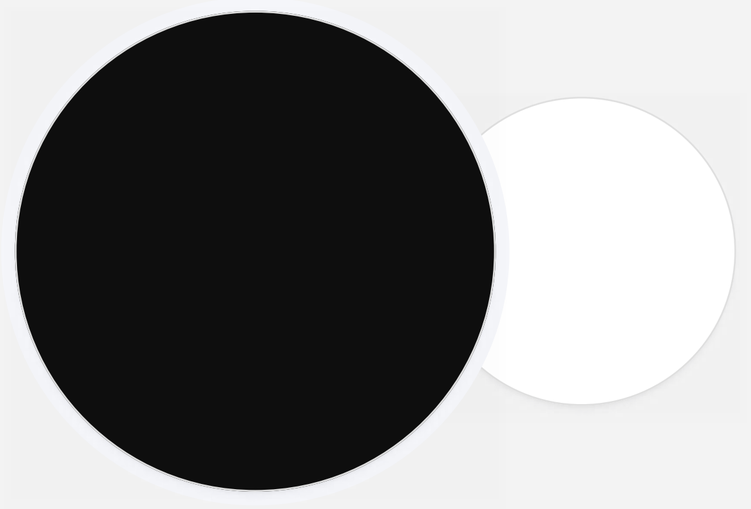
The proportion of black and white you use in an interface depends on the brand personality. Use mostly white backgrounds to create a light interface that conveys a simple, classic, or minimal feel.



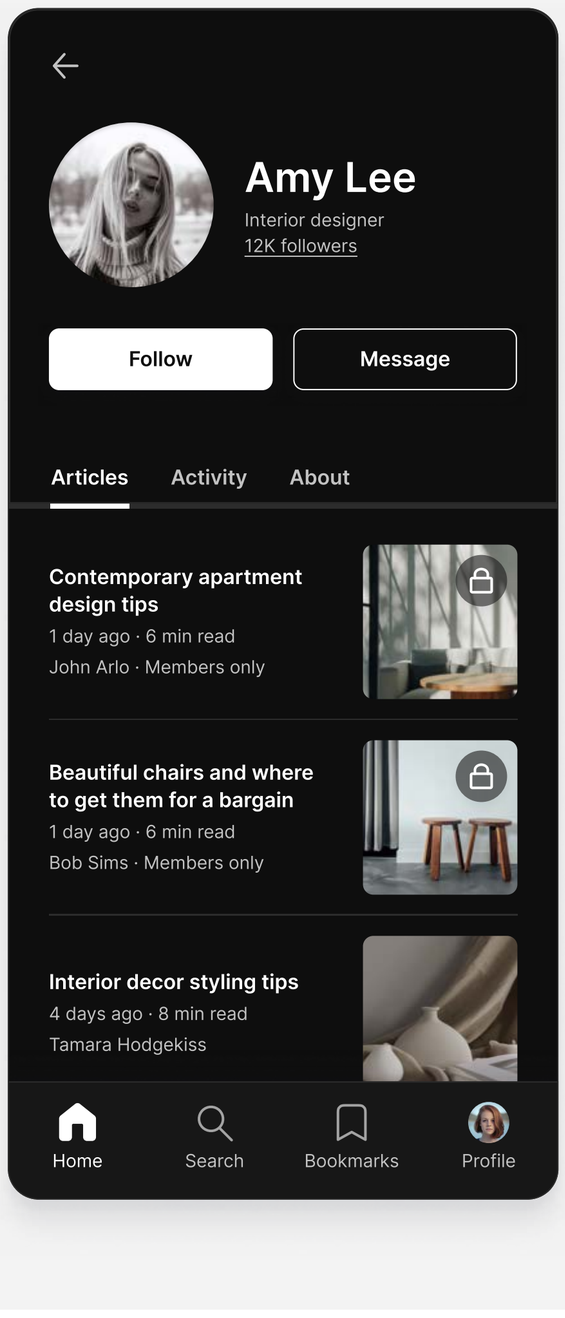


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Use mostly black backgrounds to create a dark interface that conveys a dramatic, powerful, or luxurious feel.



#1A1A1A #FFFFFF



Avoid pure black

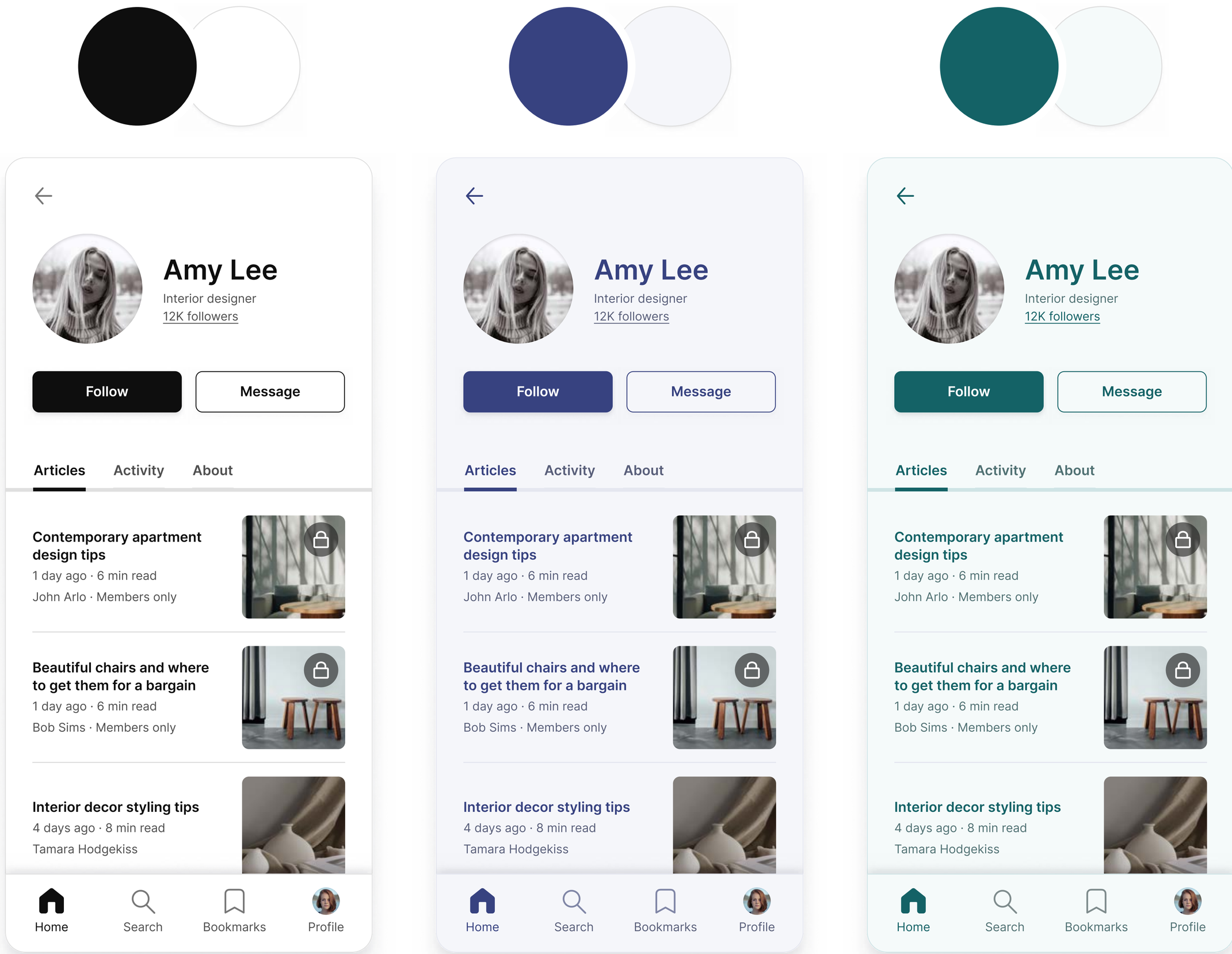
It’s generally safest to avoid pure black as it has a high contrast against white. This high contrast can cause eye strain and fatigue, especially when reading long text.

Black has 0% colour brightness and white has 100% colour brightness. The large difference in colour brightness causes our eyes to work harder. It’s safest to avoid pure black against white and opt for a dark grey instead.

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Add a tinge of colour to black and white

Some brands add a tinge of colour to black and white to differentiate their brand from others. With this approach, you get most of the benefits of a simple black and white interface design, but you're able to adjust the mood with a pinch of colour.



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Use 1 brand colour

Many of the top brands use a single unique colour, alongside black and white, to help convey the brand mood or personality. This works well for interface design, as you can use the brand colour purposefully to indicate interactive elements. You might recognise some of the following brand representations based solely on their brand colour.



Facebook, Airbnb, and Spotify brand colours.

Colour psychology isn’t universal

If you’ve read about colour psychology, you know that colours make people feel a certain way. For example, green is often associated with nature, growth, and success. Yellow is often thought to convey happiness, warmth, and positivity.

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Universal colour meanings sound nice in theory, but in practice, colour affects each of us differently for the following reasons:

- Colours have different meanings in different cultures.
- Your feelings about certain colours are based on your own personal experiences and preferences.
- There are different types of colour blindness that affect how people see colours.
- Our perception of colour is affected by surrounding colours, shapes, typography, and imagery.
- One colour has many different tints, shades, and tones, each of which has its own associations.

Tips for choosing a brand colour

Brand design is a complex craft in itself. We're only scratching the surface as to how it relates to UI design. As a UI designer, you'll most likely be designing interfaces for an existing brand. In case you need to create your own brand, here are a few quick tips to help you choose a single brand colour:

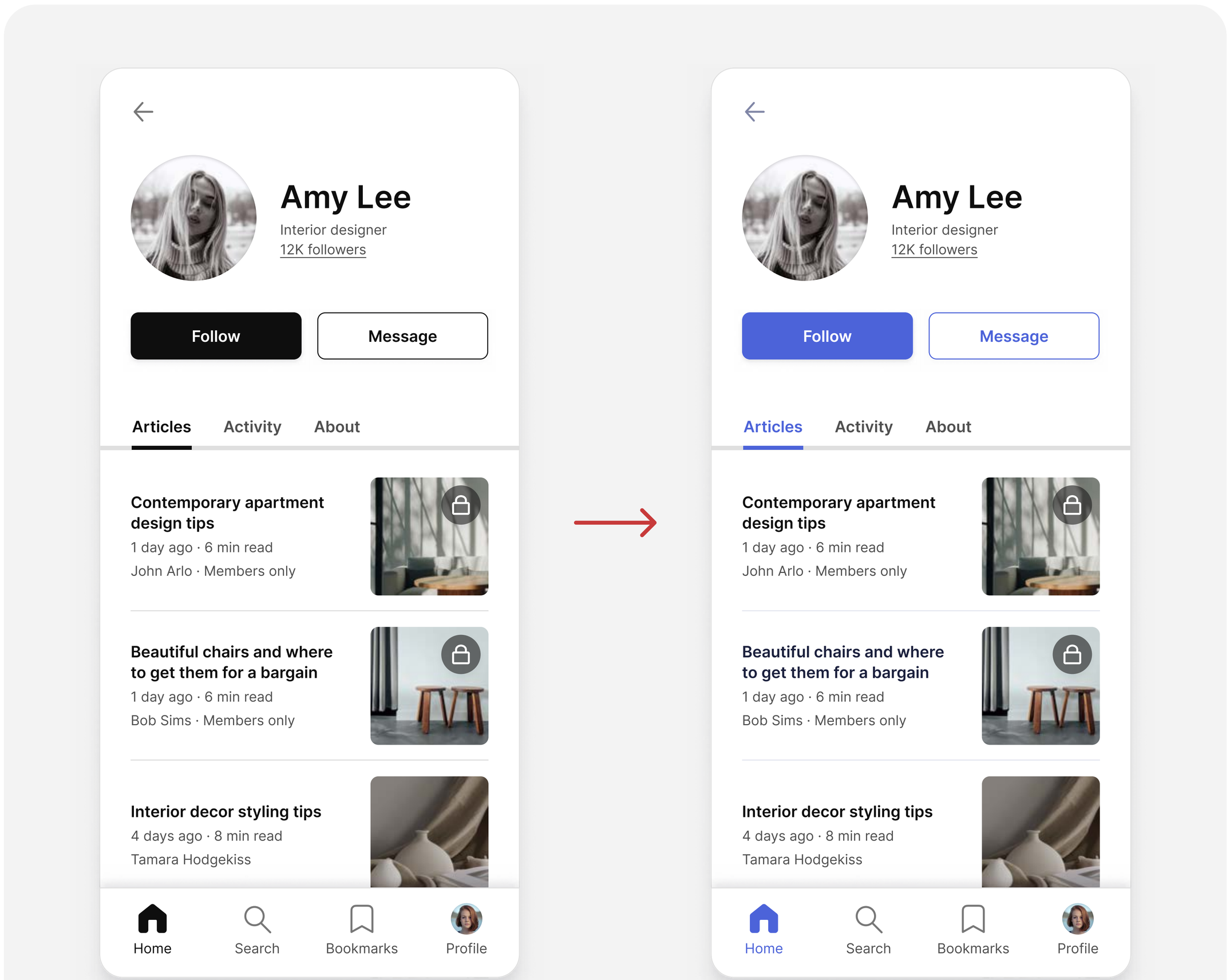
- Use colour psychology as a loose guideline.
- Test the brand colour on users to make sure it's suitable.
- Try to choose a distinctive colour to help the brand stand out.
- Remember that some colours have strong meanings associated with them. Red, for example, is a very prominent system colour used to indicate urgent errors and notifications. Using it for other interface elements could cause confusion.

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Apply the brand colour to interactive elements

Use colour sparingly and with purpose. Try to avoid using colour purely for decoration, as it can be confusing and distracting. Start with black and white and introduce colour where it conveys meaning.

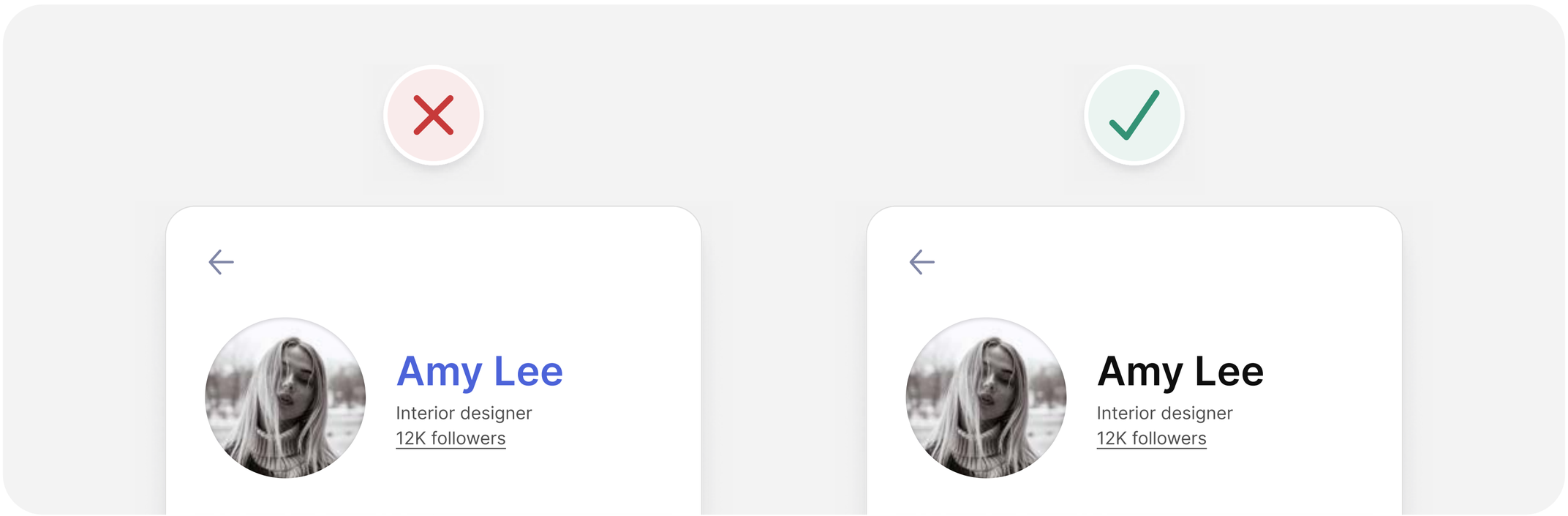
A simple and effective approach is to apply the brand colour to interactive elements like text links and buttons. This helps teach people what's interactive and what’s not. You don’t need to add colour to all interactive elements, as some already have visual cues that indicate they’re interactive. Just try to avoid using the brand colour on non-interactive elements.



The brand colour is applied to interactive elements to indicate they’re interactive

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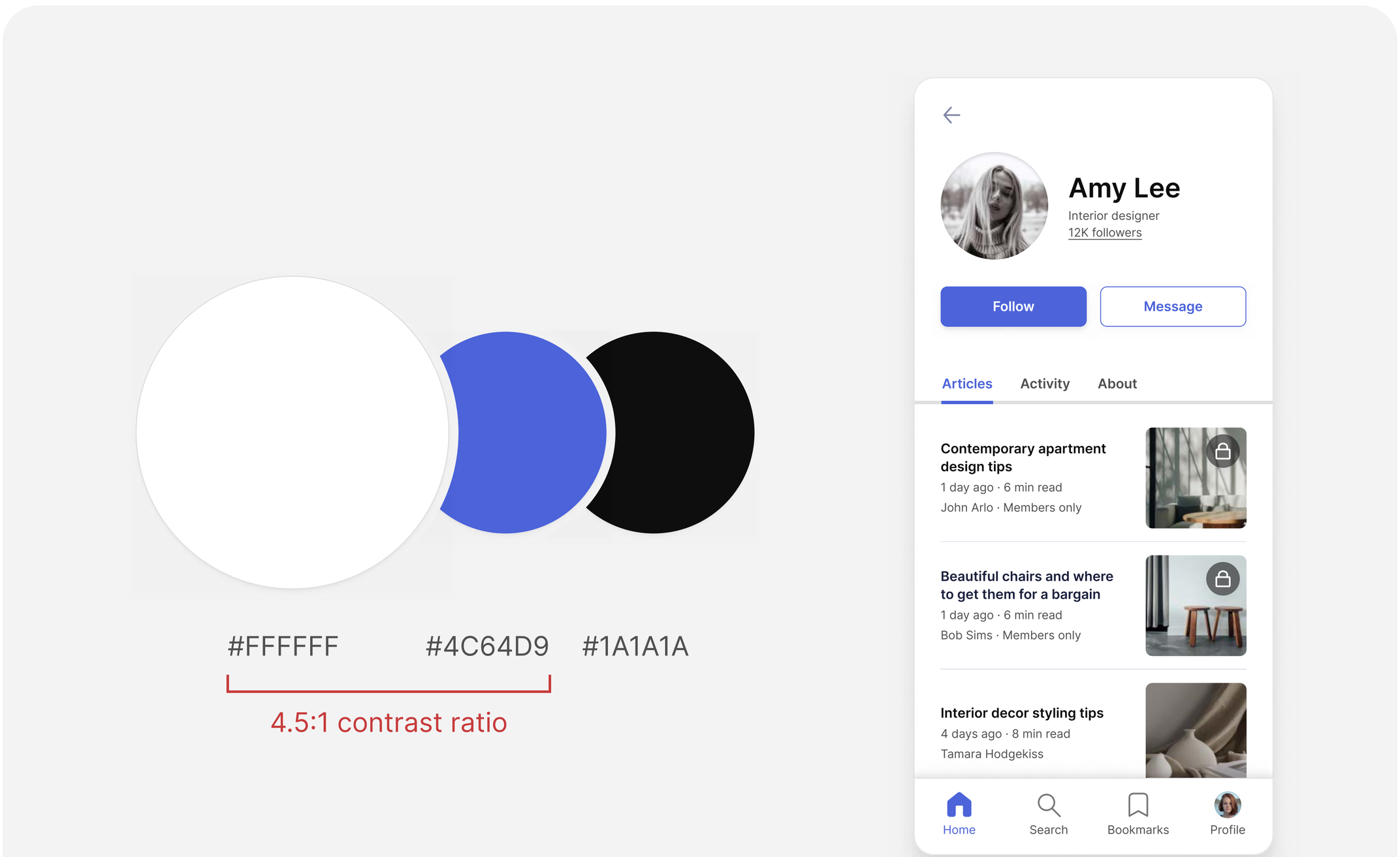
For example, avoid using colour on non-interactive headings, as they could be mistaken for links.



Coloured heading could be mistaken for a link

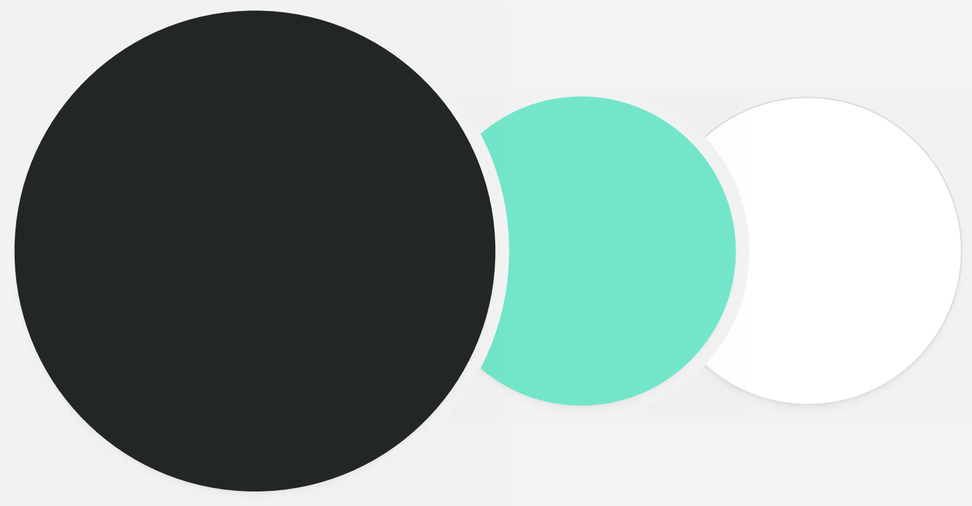
Ensure a contrast ratio of 4.5:1

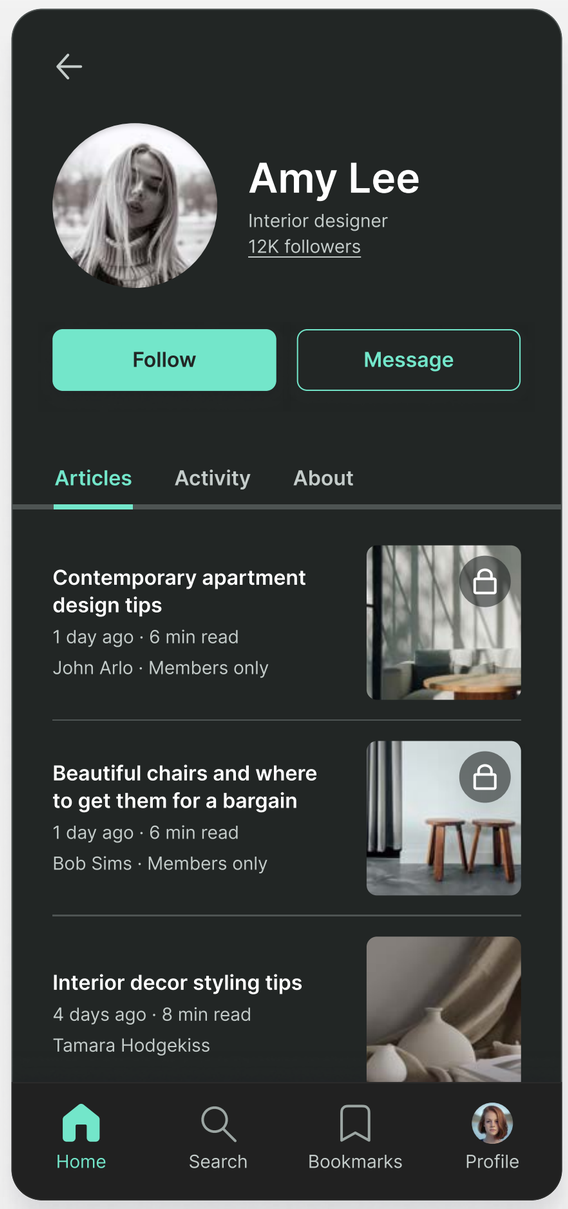
The brand colour needs to have a contrast ratio of at least 4.5:1 against the background. This ensures that button and link text are accessible to those with low vision.



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You should also check the contrast using the APCA method, as the standard method doesn’t work well with certain colours. The APCA method is especially effective for measuring contrast on dark interfaces.





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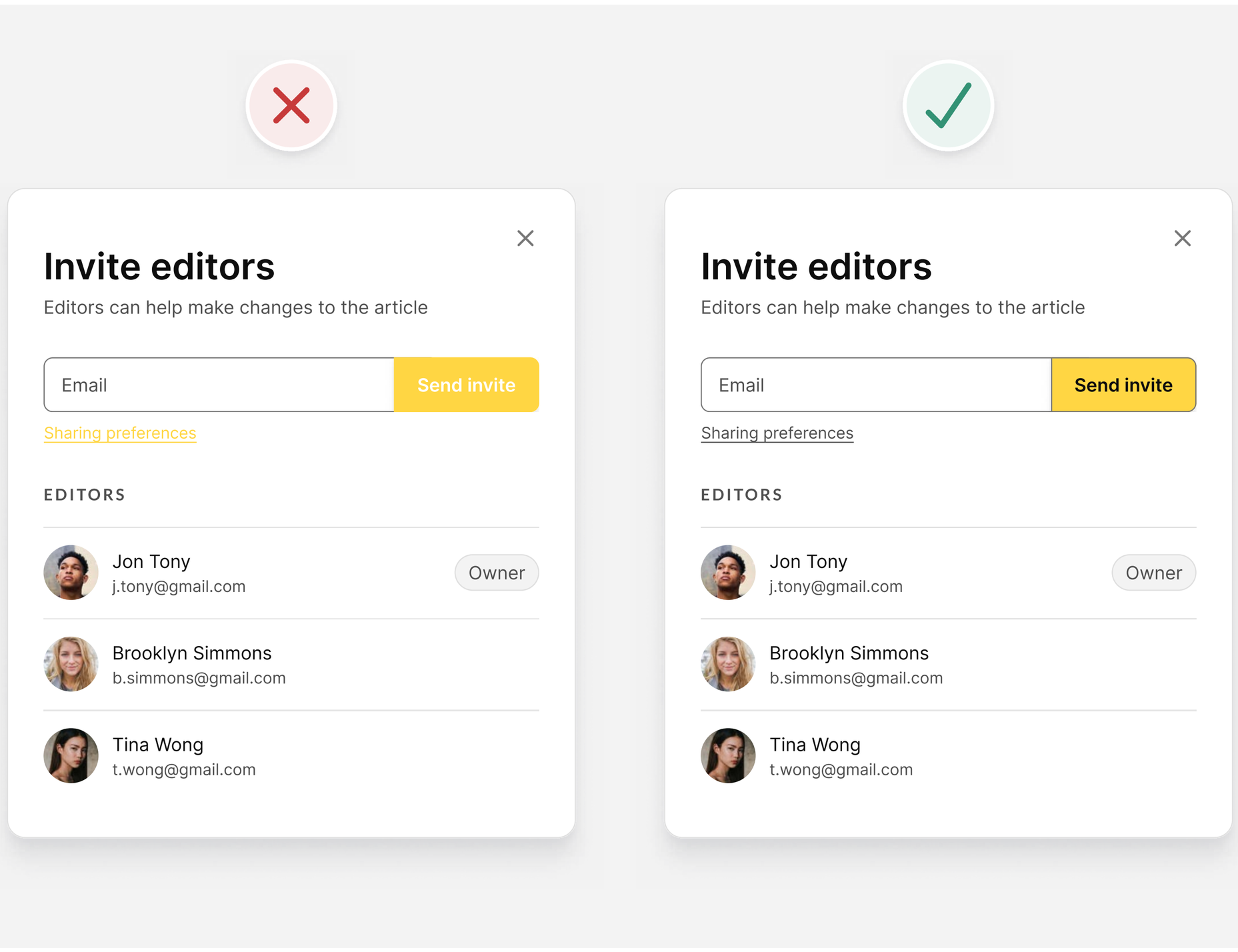
What about low contrast colours?

If the brand colour is a light colour like yellow, it won’t have enough contrast to be accessible against light background colours like white. This means that you won’t be able to have yellow text links or yellow buttons with white text.

Depending on the brand colour, you might be able to darken it slightly to get it to an accessible contrast ratio (without losing brand recognition). Another trick is to add a text shadow to the white button text.

If your brand colour is very light, try the following:

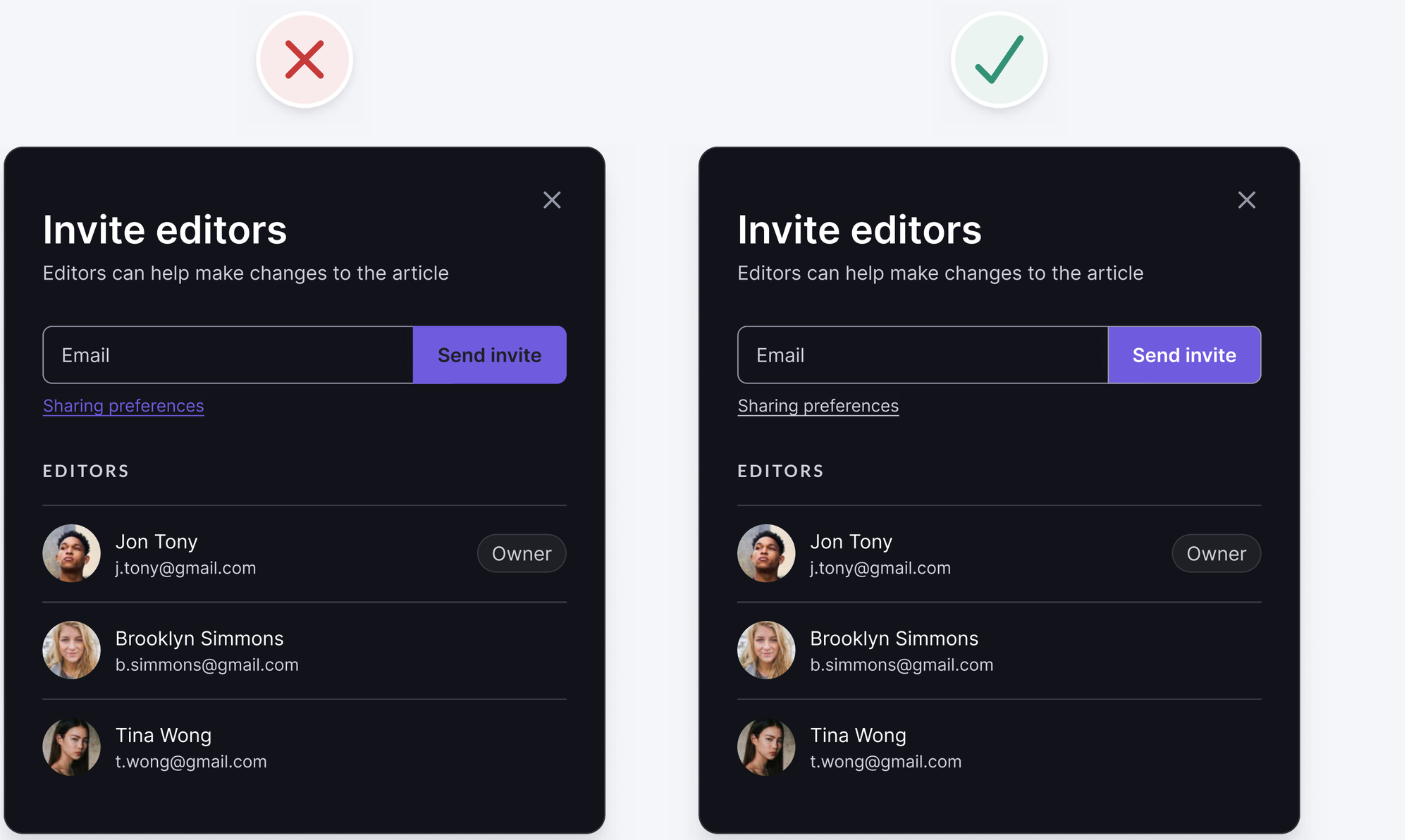
- Use the text colour for button text, text links, and other interactive elements to ensure they’re accessible and prominent.
- Add a border to buttons to ensure they have at least a 3:1 contrast ratio.



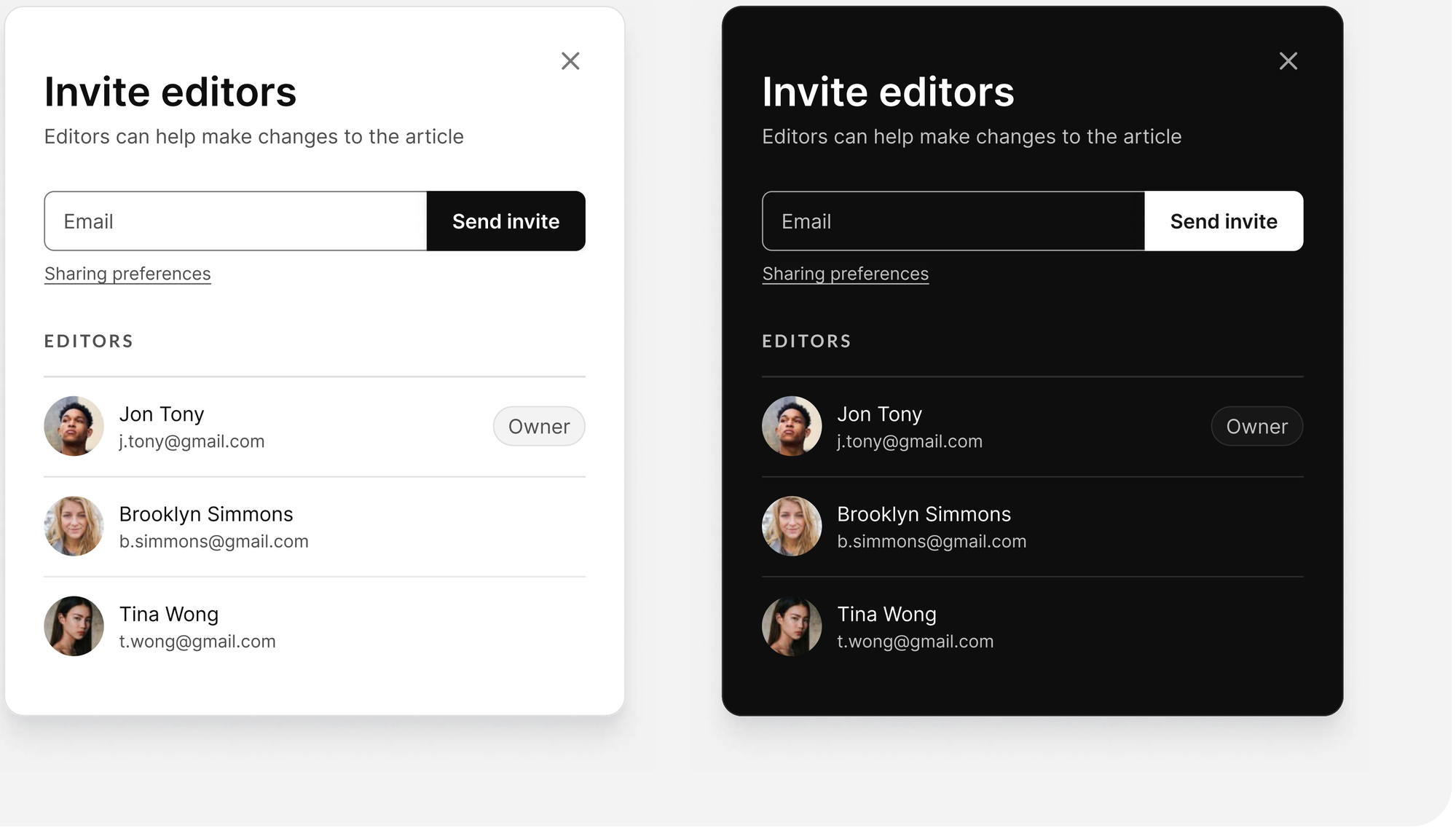
Button and text links are made accessible

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You can use a similar approach for dark brand colours on dark backgrounds.



You could also consider not using your brand colour for interactive elements and opt for a simple black and white aesthetic instead.



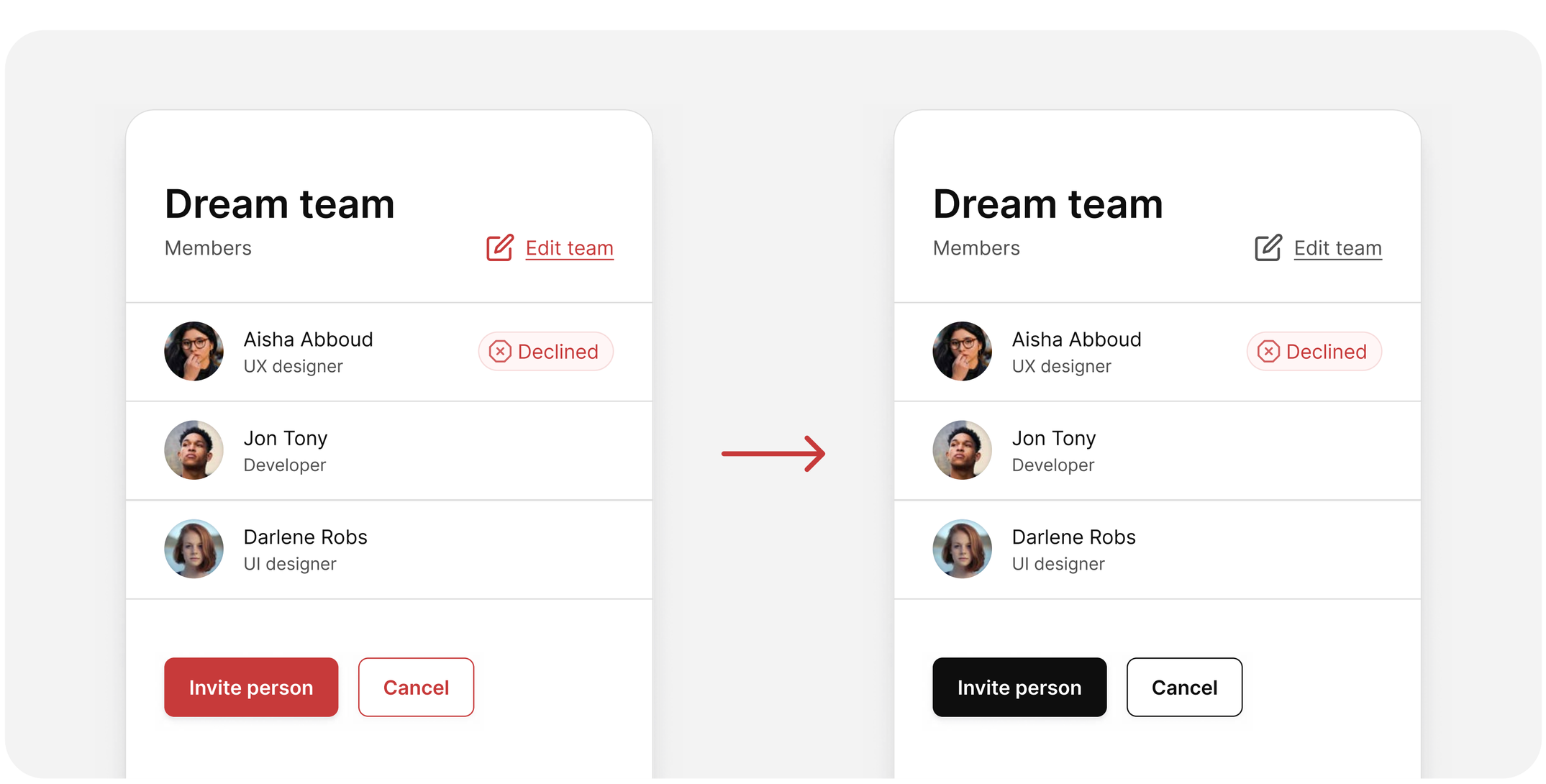
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If the brand colour has meaning, avoid using it for interactive elements.

Some colours have strong meanings associated with them. Red, for example, is a very prominent system colour used to indicate urgent errors, destructive actions, and notifications.

Using it for other interface elements, like actions, could cause confusion. Green and amber are other system colours that indicate success and warnings respectively.

If the brand colour has meaning, it’s safest to avoid using it for interactive elements like text links and buttons. This helps avoid colours having conflicting meanings.



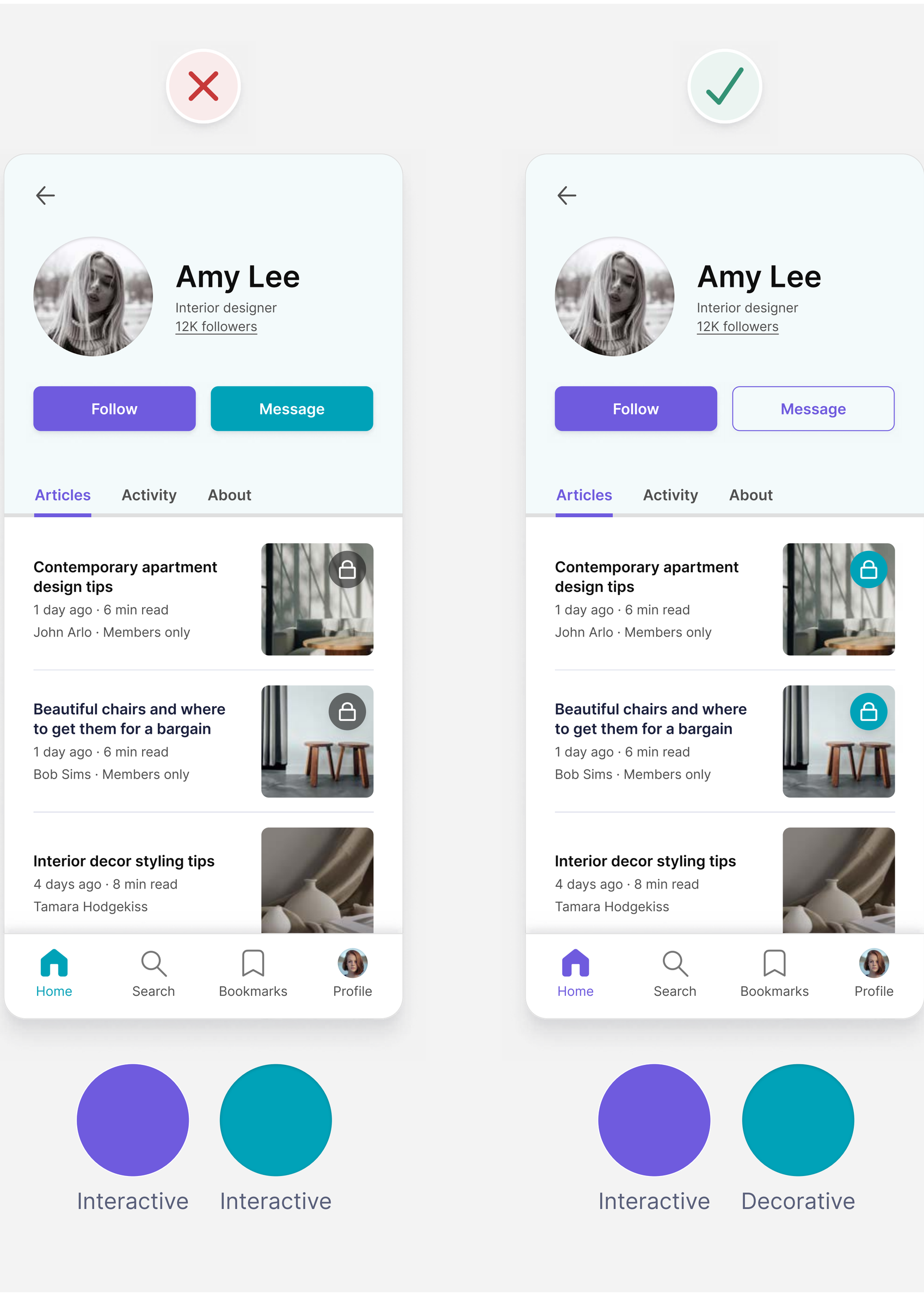
Using red for interactive elements can cause confusion

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What if there are multiple brand colours?

If there are multiple brand colours, use the highest contrast colour for interactive elements and use the others sparingly for decorative elements.

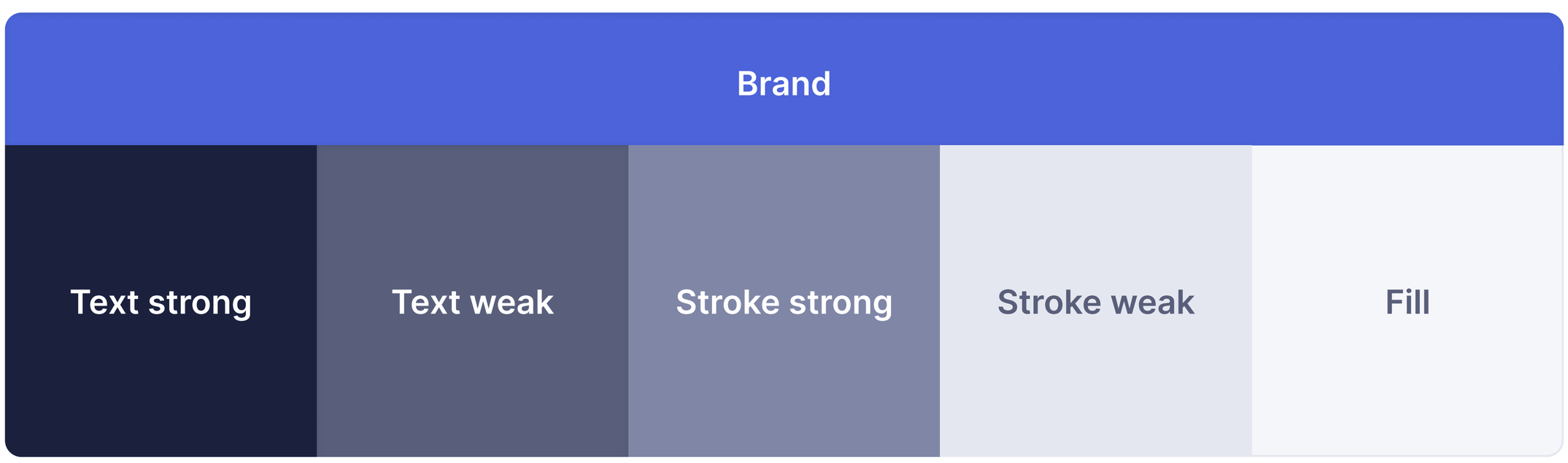
Decorative elements might include backgrounds, borders, icons, and illustrations. Don’t use more than one colour for interactive elements, as it could cause confusion around what colours mean.



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Create a colour palette with rules that govern its usage

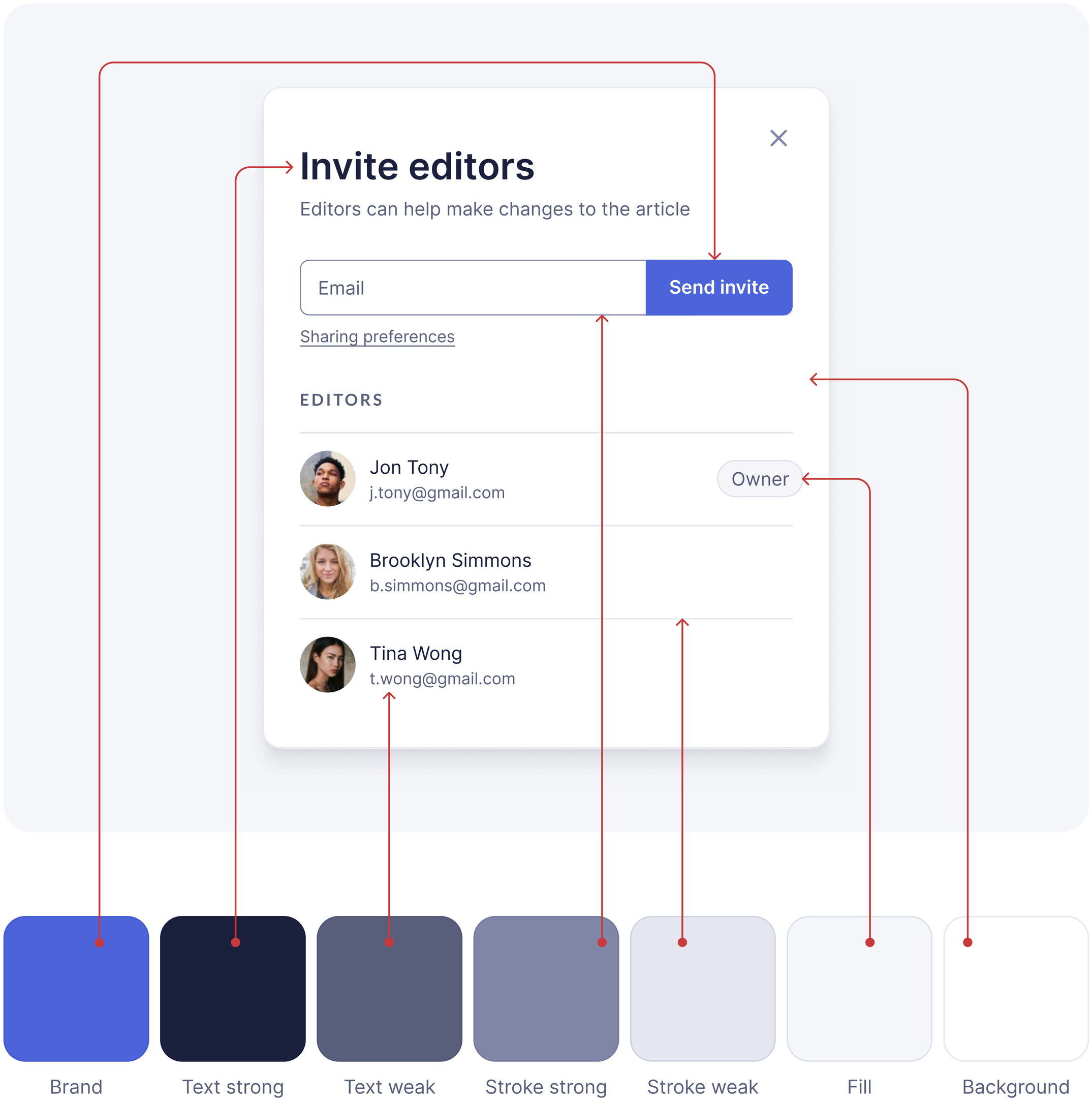
Rather than choosing colours from an unlimited set of options, create a small set of predefined colours called a colour palette. Define simple rules that govern how each colour is used. This makes it faster and easier to apply colours and also results in a more consistent design.



We'll create a simple yet powerful colour palette soon. It's made up of 5 variations of the brand colour. Each colour has a purpose to help you quickly decide how and where to use it:

- **Brand** - used to indicate interactive elements like text links and buttons.
- **Text strong** - used for primary text, like headings, body content, and form labels to ensure they're prominent and legible.
- **Text weak** - used for supporting text to make it less prominent.
- **Stroke strong** - used for non-decorative borders on interface elements like form input fields. Also used for icons.
- **Stroke weak** - used for decorative borders, like dividing lines, that aren't critical to identifying interface elements.
- **Fill** - used as a secondary background to help differentiate elements, like tags or badges, that sit on the main white background.

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We’ll create the colour palette next. To make it easier, let’s quickly learn about the HSB colour system.

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Use the HSB colour system

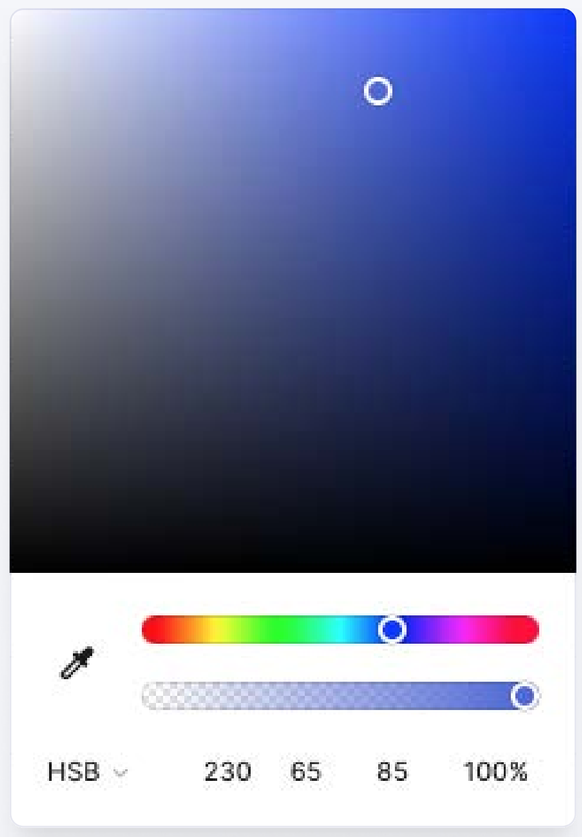
Using the HSB (Hue, Saturation, Brightness) colour system makes it much easier to define your colour variations. If you haven't used the HSB colour system before, you've been missing out. It's really simple and very powerful.

Here's a quick introduction to HSB colours:

- **Hue** - a number between 0 and 360 degrees that represents the colours of the rainbow. I'm using a hue of 230 for my brand colour.
- **Saturation** - a number between 0 and 100 that represents the intensity or richness of a hue. A saturation of 100 is the richest version of the hue and 0 is a grey version of the hue.
- **Brightness**- a number between 0 and 100 that represents the lightness/darkness of a hue. A brightness of 100 is the lightest version of the hue and 0 is always black.

Creating variations of the brand colour using HSB

Start with the brand colour as a base and change the saturation and brightness to create other variations.



Colour picker using the HSB colour system

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5 colour variations is often all you need

Colour palettes can be unnecessarily large and complex, making them difficult to understand and follow. In many cases, all you need is 1 brand colour and 5 variations of that colour. You can add more variations if needed.

	Brand HSB: 230, 65, 85	Contrast with fill variation must be at least:	**4.5 : 1**
	Text strong HSB: 230, 57, 24	Contrast with fill variation must be at least:	**4.5 : 1**
	Text weak HSB: 230, 27, 48	Contrast with fill variation must be at least:	**4.5 : 1**
	Stroke strong HSB: 230, 23, 65	Contrast with fill variation must be at least:	**3 : 1**
	Stroke weak HSB: 230, 5, 94	This is a decorative colour, so it doesn't need to be high contrast.	
	Fill HSB: 230, 2, 98	Text and interface elements sitting on this colour must have sufficient contrast	
	Background HSB: 0, 0, 100	Text and interface elements sitting on this colour must have sufficient contrast	

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This simple, accessible, and powerful colour palette works well in most cases. It does have a limitation that comes with using solid colours though. We'll look at this limitation later. We'll also consider the advantages of using transparent colours for more complex websites and apps.

Let's create a simple solid colour palette first.

Brand

- I'm using a hue of 230 for my brand colour. I'm also using the brand colour to indicate interactive elements like buttons and text links.
- Must have a contrast ratio of at least 4.5:1 against the "fill" variation, as a text link could sit on a "fill" background.

Text strong

- Greatly decrease the brightness of the brand colour. Aim for a very dark grey with a tinge of the brand colour. Because this variation is so dark, you'll need to saturate it quite heavily.
- Must have a contrast ratio of at least 4.5:1 against the "fill" variation, as it's used for primary text that could sit on a "fill" background.

Text weak

- Increase the brightness and decrease the saturation of the previous variation. Aim for a dark grey with a tinge of the brand colour.
- Must have a contrast ratio of at least 4.5:1 against the "fill" variation, as it's used for secondary text that could sit on a "fill" background.

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Stroke strong

- Increase the brightness and decrease the saturation of the previous variation. Aim for a medium grey with a tinge of the brand colour.
- Must have a contrast ratio of at least 3:1 against the “fill” variation, as it’s used for non-decorative borders on interface elements. For example, form input field borders. The borders of form input fields are critical to identifying them as input fields, so they need to have sufficient contrast.

Stroke weak

- Increase the brightness and decrease the saturation of the previous variation. Aim for a light grey with a tinge of the brand colour.
- This is just a decorative colour used for borders that aren’t critical to identifying interface elements, so it doesn’t need to be high contrast. Decorative borders are often used to emphasise the separation between interface elements. Removing them shouldn’t hinder usability.

Fill

- Increase the brightness and decrease the saturation of the previous variation. Aim for a very light grey with a tinge of the brand colour.
- The colour of any text and interface elements that sit on this background colour need to have a contrast ratio that meets WCAG 2.1 level AA accessibility requirements.

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What about interaction states?

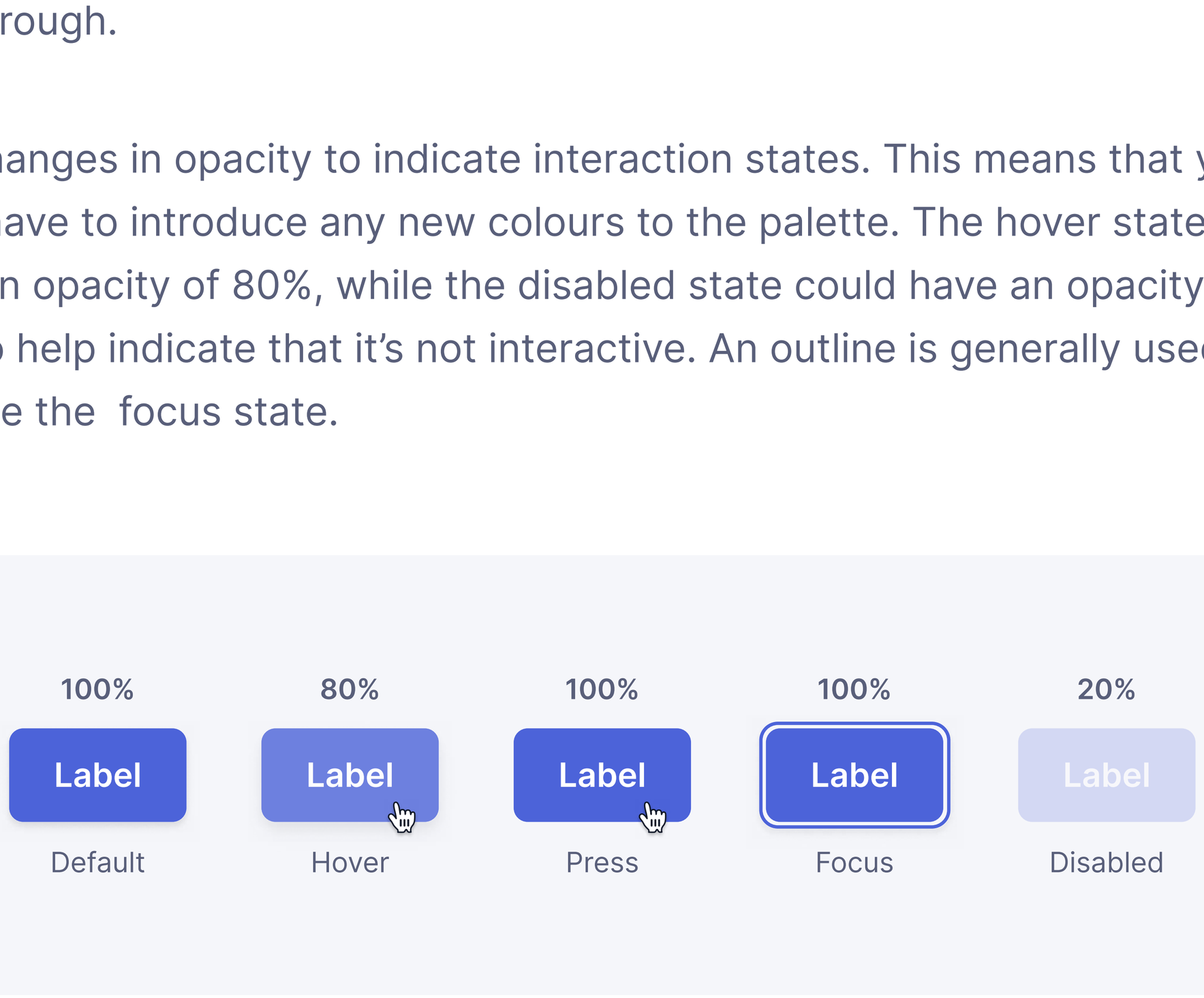
Interactive elements have states including hover, press, focus, and disabled. To indicate these states, consider the following options:

- Change the opacity
- Change the fill colour
- Change the elevation
- Toggle a text underline
- Use animation

Change the opacity

Solid colours have an opacity of 100%, which means that you can’t see through them. Lowering the opacity of a colour makes it more transparent or see-through.

Use changes in opacity to indicate interaction states. This means that you don’t have to introduce any new colours to the palette. The hover state could have an opacity of 80%, while the disabled state could have an opacity of 20% to help indicate that it’s not interactive. An outline is generally used to indicate the focus state.

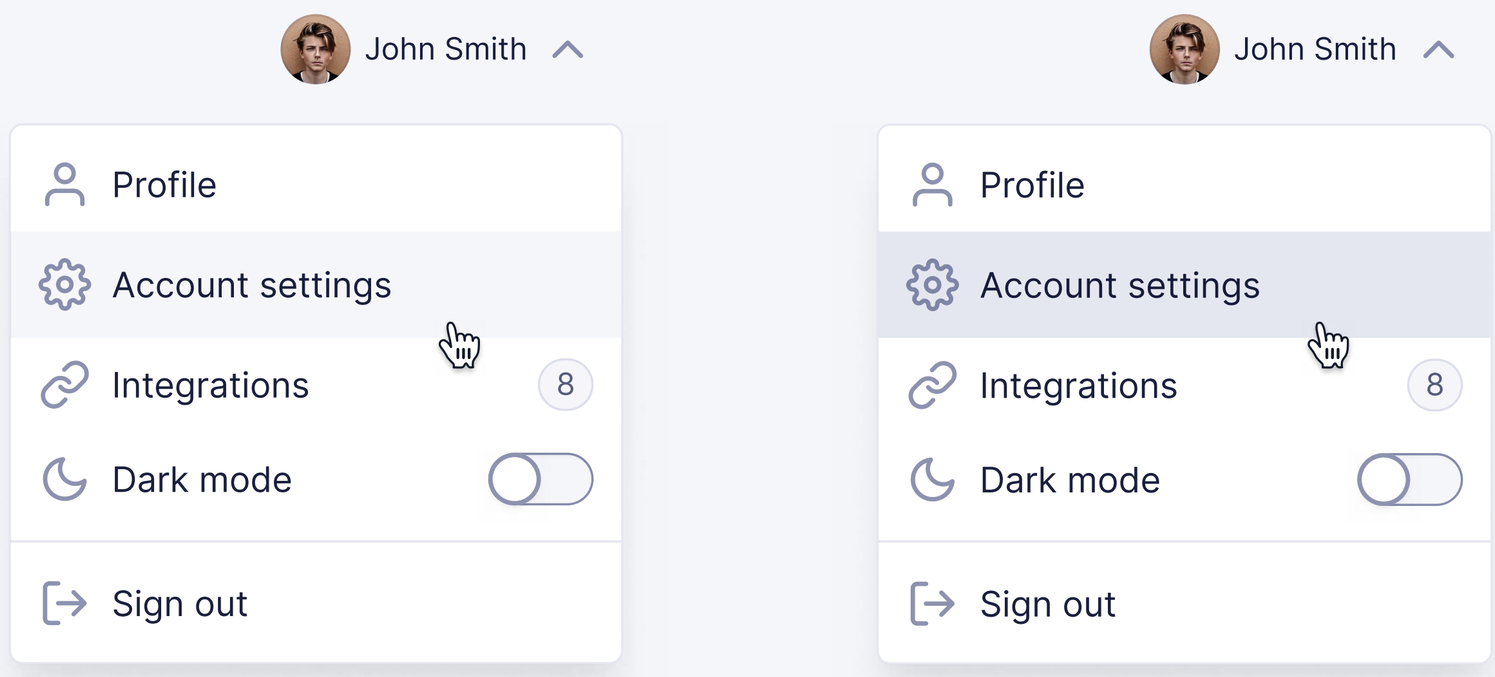


Changes in opacity being used to indicate button states

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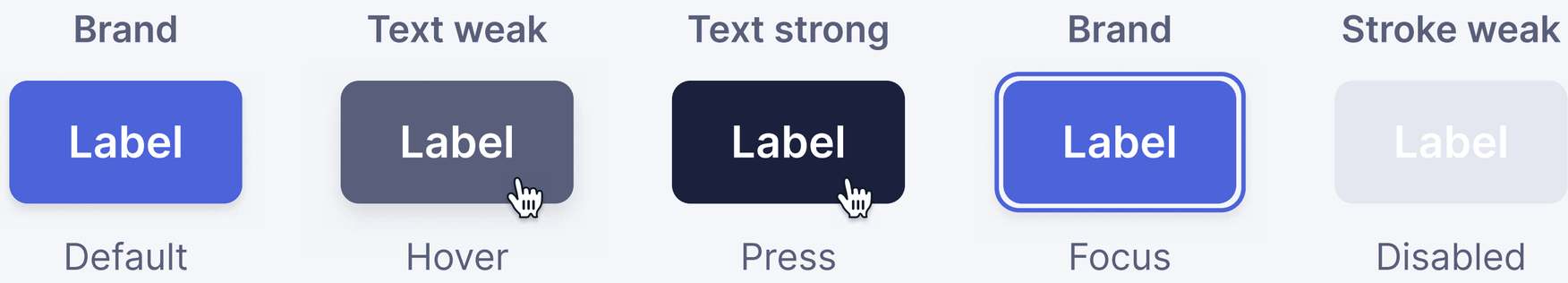
Change the fill colour

For interactive elements with the “Background” colour, you can use the “Fill” colour variation from the palette for the hover state. For the press state, use the “Stroke weak” colour variation.



Fill colours being used to indicate states in a dropdown menu

For interactive elements that use the brand colour, like buttons, you could change the fill colour to others from the palette. “Text weak” could be used for the hover state, “Text strong” for the press state, and “Stroke weak” for the disabled state.

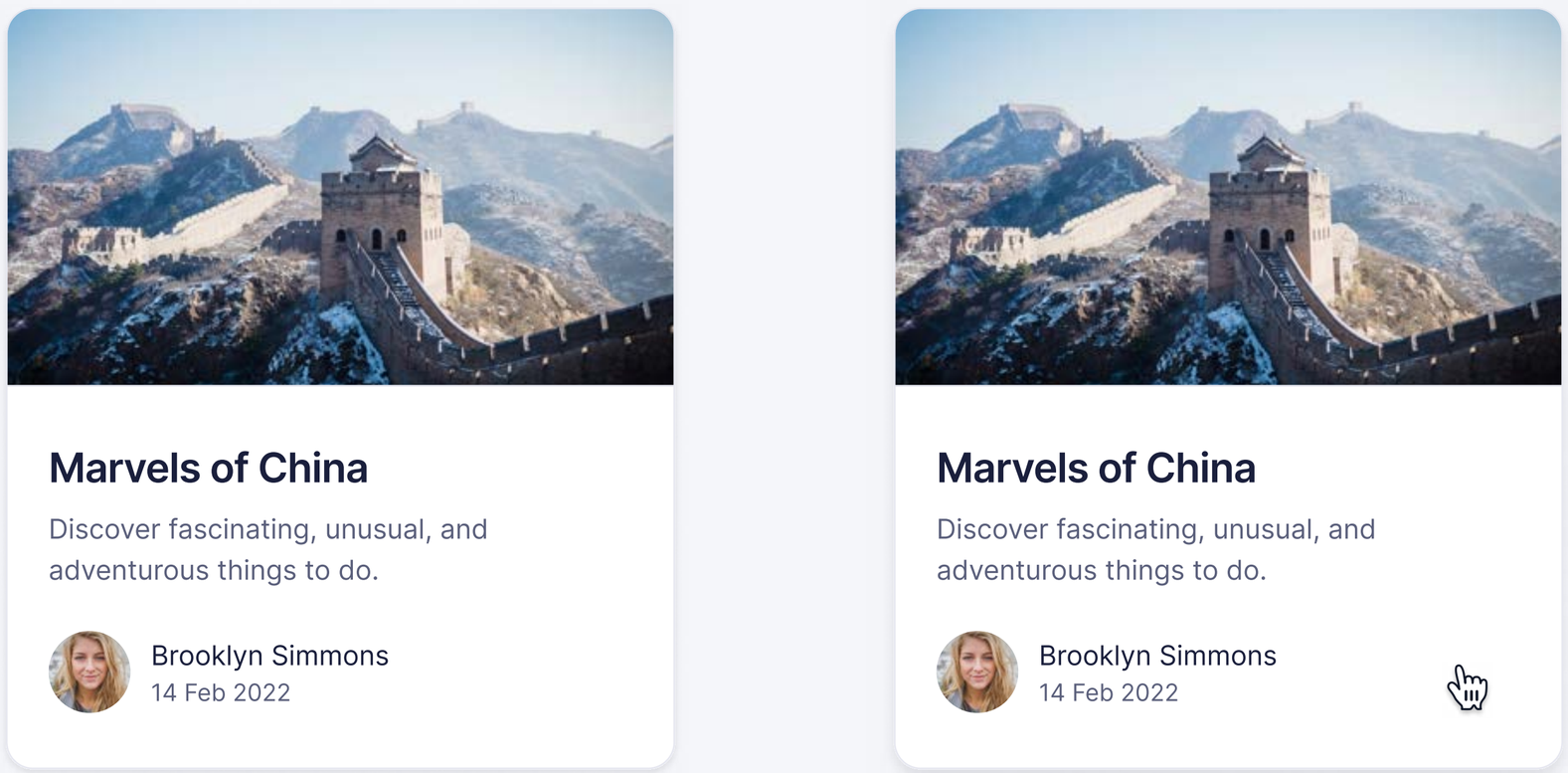


Fill colours being used to indicate states in a button

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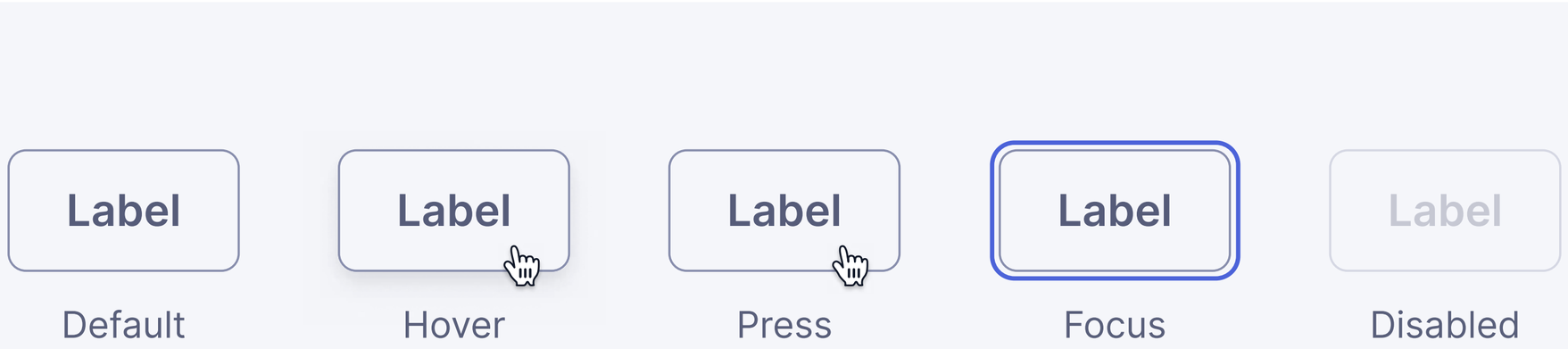
Change the elevation

Another quick and simple way of indicating state is to change the elevation of interactive elements. Elements can be elevated using shadows. In the following example, the card component is elevated higher on hover.



Card component is elevated higher on hover

Similarly, in the next example, a shadow is used to elevate a button on hover. The press state is often the same as the default state, as it only needs to differ from the hover state.

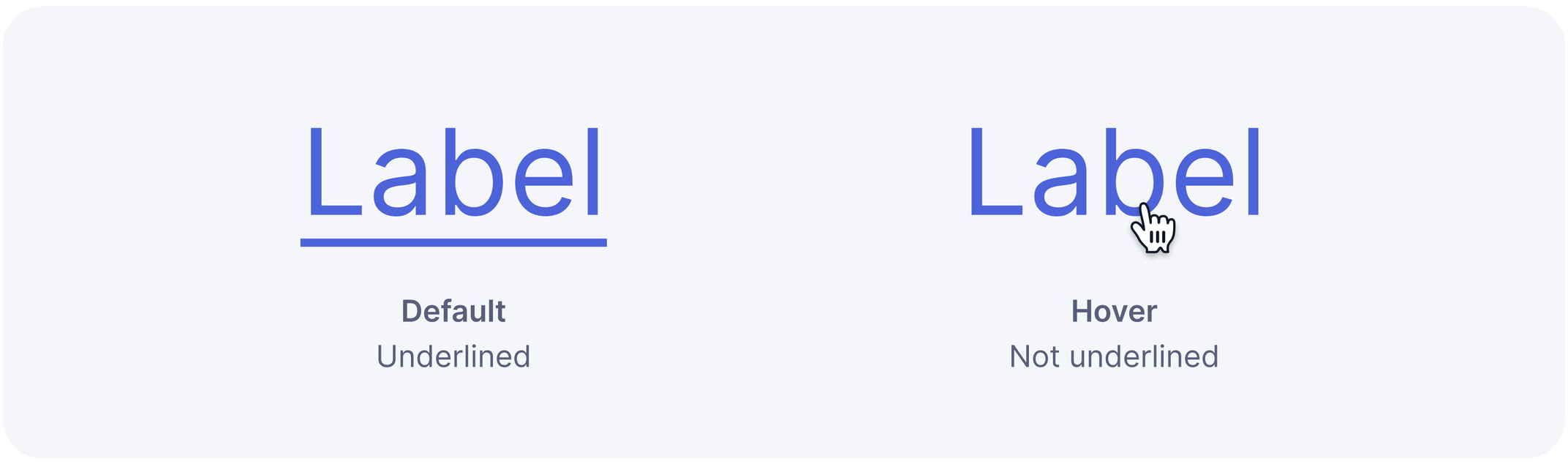


Button hover state is elevated using a shadow

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Toggle a text underline

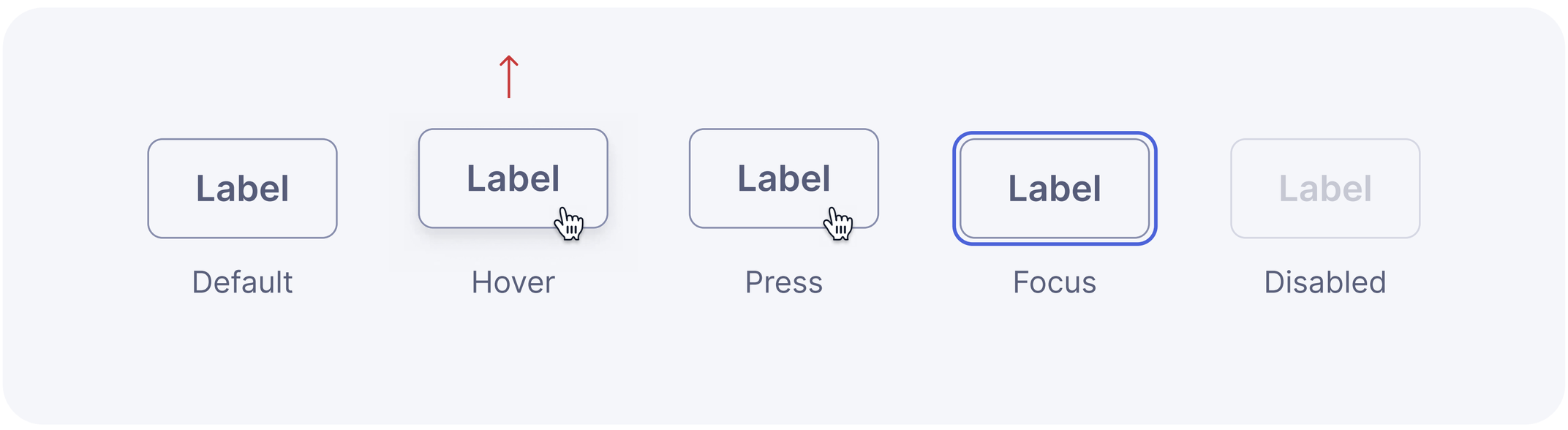
For interactive text that’s underlined, like text links, you could simply remove the underline on hover. For interactive text that isn’t underlined, like text in a navigation menu, consider underlining it on hover.



Text underline is removed on hover

Use animation

You can also use subtle animations to differentiate states. For example, you could move a button slightly upwards on hover, or animate the border, or the background. Just make sure the animation is quick and subtle, so it doesn’t get in the way of the user completing their task.



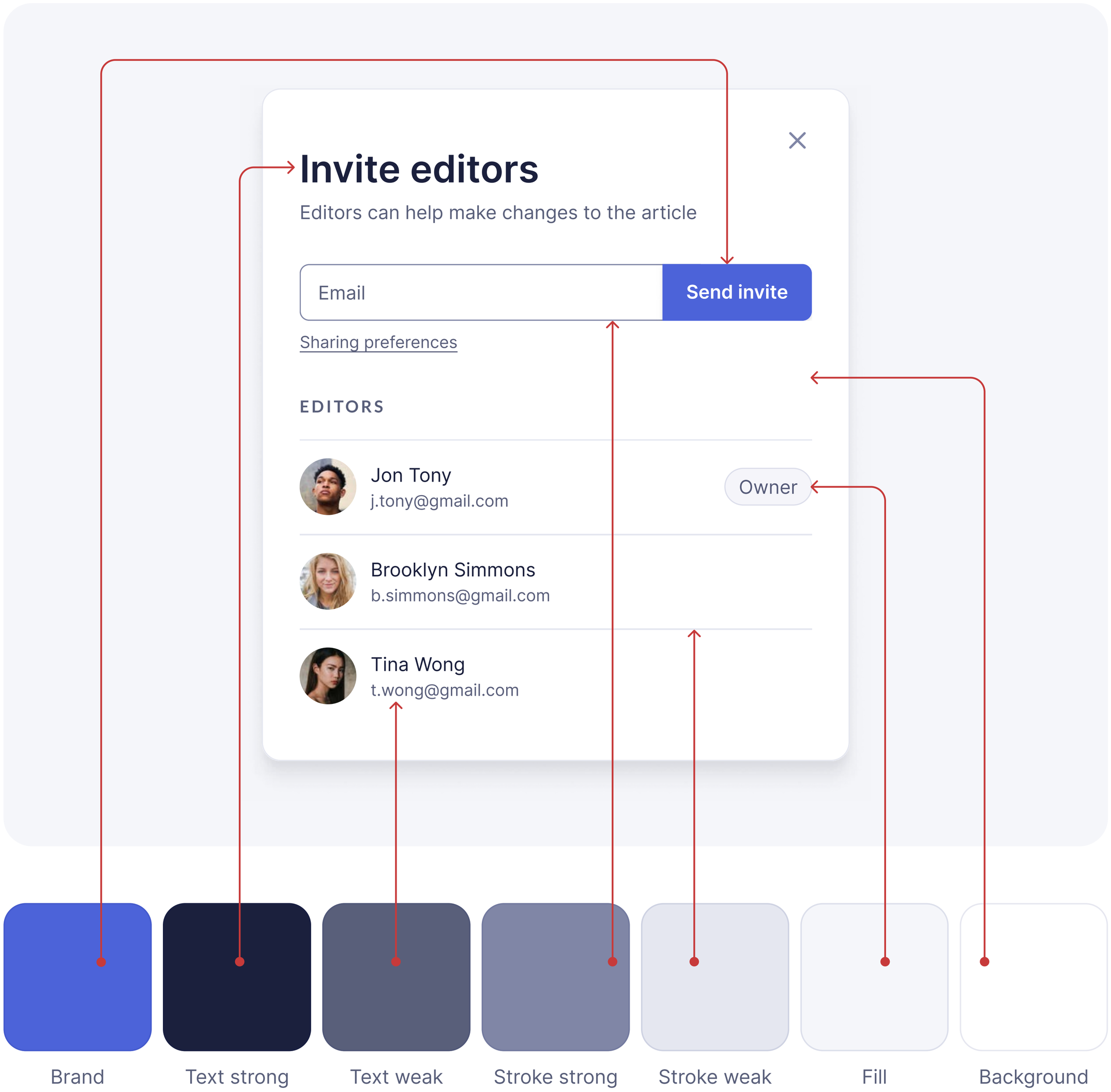
Button is moved upwards slightly on hover

You could also get creative and combine some of these options to clearly indicate interaction states.

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Test your colour palette

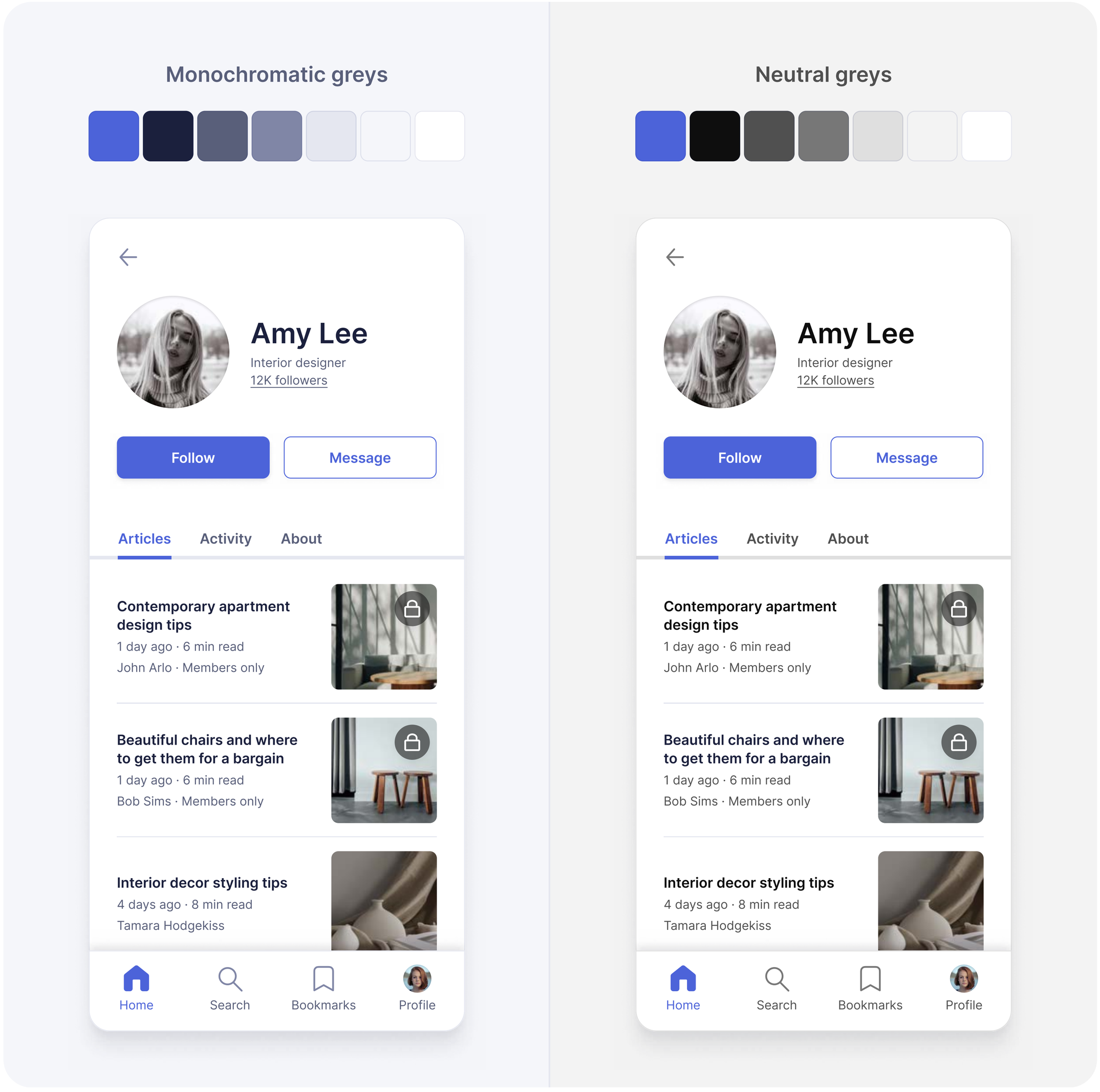
Test your colour palette using an interface example that contains all colour variations. Seeing all of the colours in context is the only way to be sure they'll work well together.



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Monochromatic versus neutral greys

Your colour palette is monochromatic, which means that it consists of variations of a single colour hue, rather than neutral greys. Neutral greys don’t contain any colour hue. They have a saturation of zero.



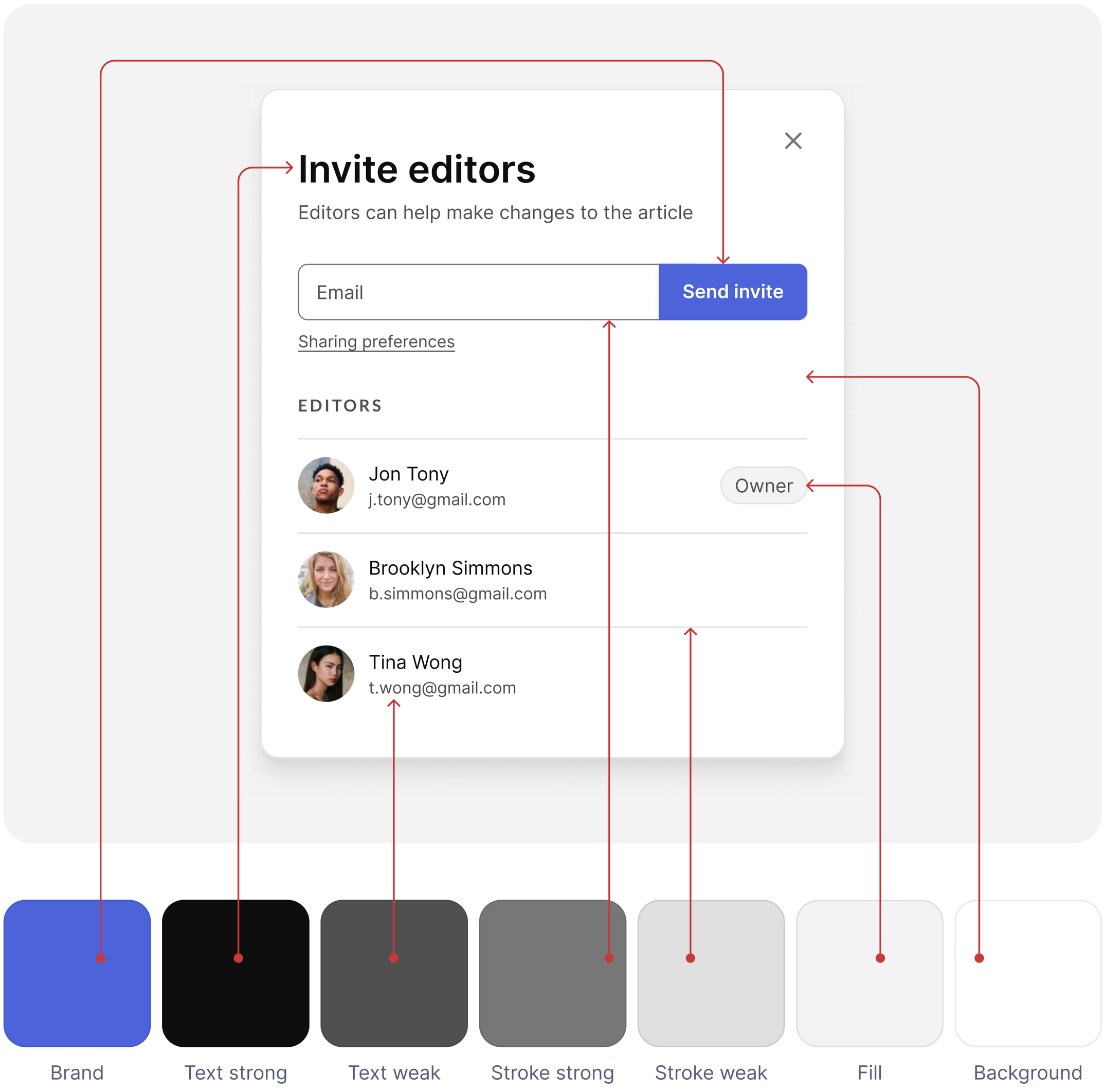
Monochromatic colour palettes are a popular and effective option for interface design for the following reasons:

- Variations of a single colour create a simple and cohesive look.

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- Colour can be assigned a functional purpose rather than just being decorative. For example, the brand colour can be used to indicate actionable or interactive elements like links and buttons.
- Fewer colours can simplify an interface and decrease cognitive load.
- Most brands consist of a single brand colour, so a monochromatic colour palette conveys a strong brand presence.

If you prefer a neutral colour palette like the following example, simply use variations of neutral grey along with your brand colour. Set the saturation to zero to create neutral variations of grey.



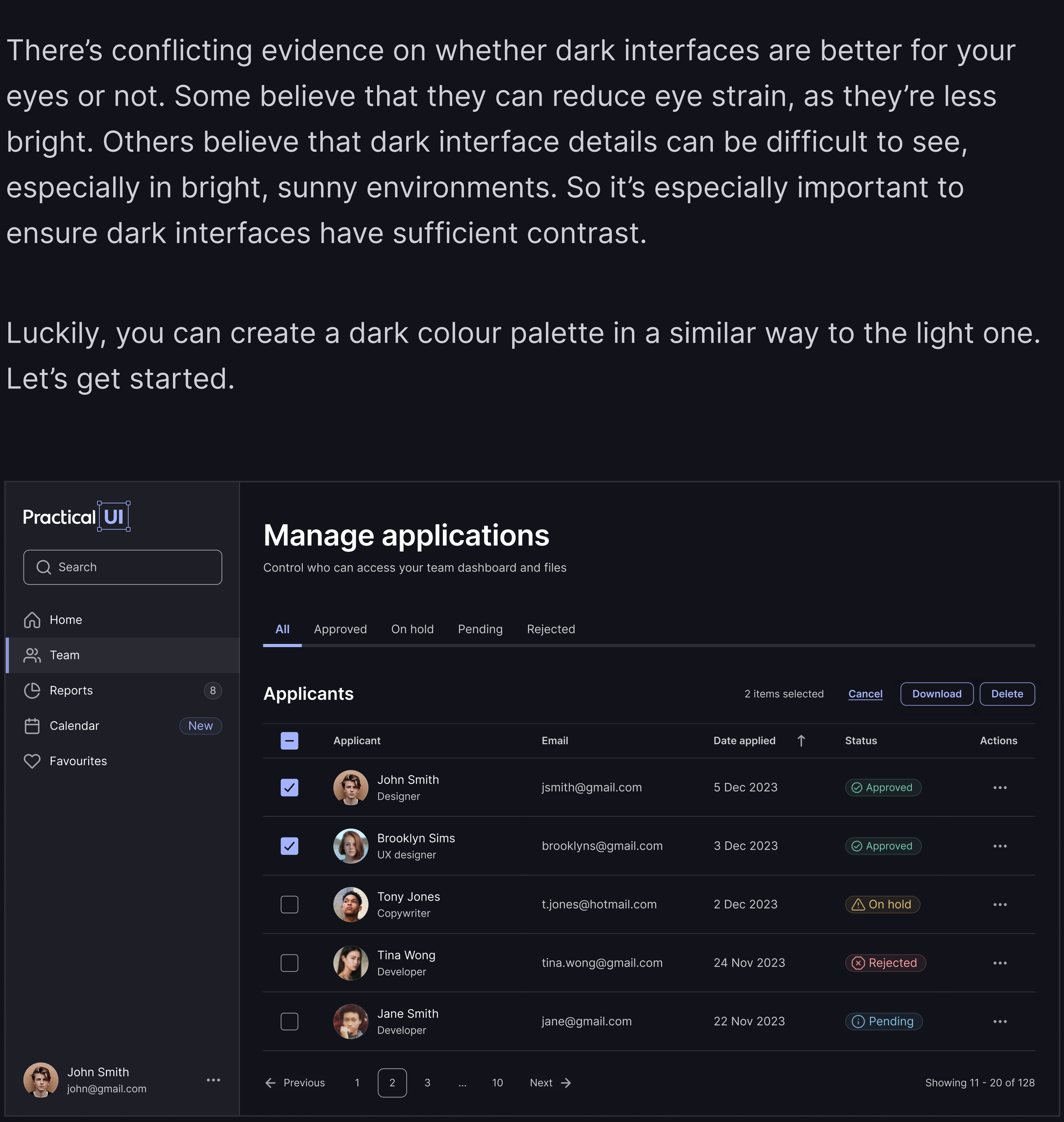
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Create a dark colour palette

Dark interfaces are quickly growing in popularity. Many websites and apps allow you to switch between light and dark mode based on your preference. Others automatically switch based on the time of day. Some brands opt for a dark only aesthetic to create a dramatic, powerful, or luxurious feel.

There's conflicting evidence on whether dark interfaces are better for your eyes or not. Some believe that they can reduce eye strain, as they're less bright. Others believe that dark interface details can be difficult to see, especially in bright, sunny environments. So it's especially important to ensure dark interfaces have sufficient contrast.

Luckily, you can create a dark colour palette in a similar way to the light one. Let's get started.



An example of a dark interface

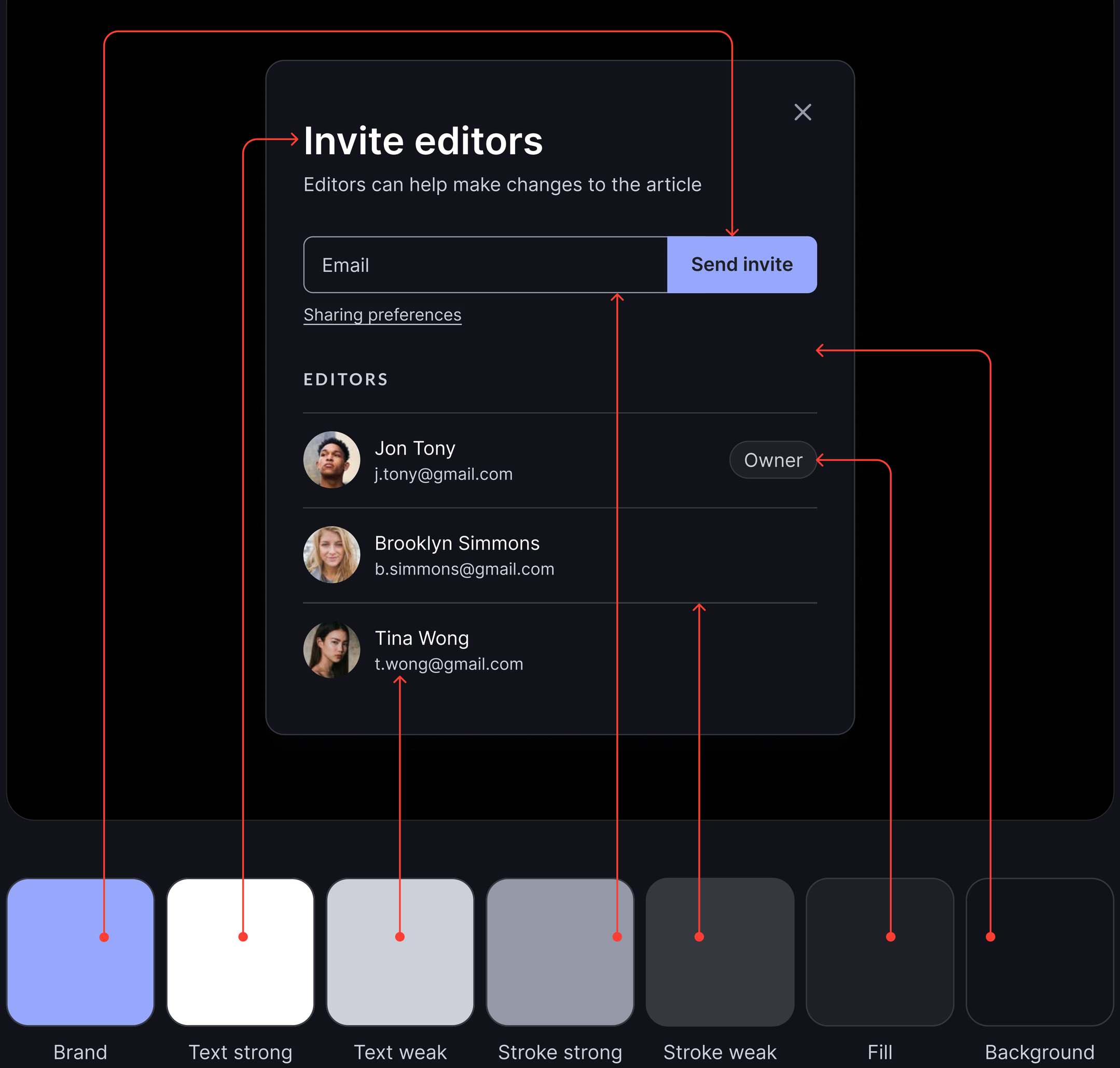
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Use the main brand colour hue as a base and change the saturation and brightness to create the other variations. Increase the contrast well above the minimum WCAG requirements for dark interfaces, as they can be more difficult to see. Check contrast using the APCA method for more accurate contrast measurements.

Brand HSB: 230, 40, 99	Contrast with fill variation must be at least:	4.5 : 1
Text strong HSB: 230, 0, 100	Contrast with fill variation must be at least:	4.5 : 1
Text weak HSB: 230, 5, 85	Contrast with fill variation must be at least:	4.5 : 1
Stroke strong HSB: 230, 10, 65	Contrast with fill variation must be at least:	3 : 1
Stroke weak HSB: 230, 15, 25	This is a decorative colour, so it doesn’t need to be high contrast.	
Fill HSB: 230, 20, 15	Text and interface elements sitting on this colour must have sufficient contrast	
Background HSB: 230, 30, 10	Text and interface elements sitting on this colour must have sufficient contrast	

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Start with white for the “Text strong” variation, it has a saturation of 0 and a brightness of 100. Gradually increase saturation and decrease brightness to create the other colour variations. Avoid pure black for the background colour and opt for a dark grey instead.

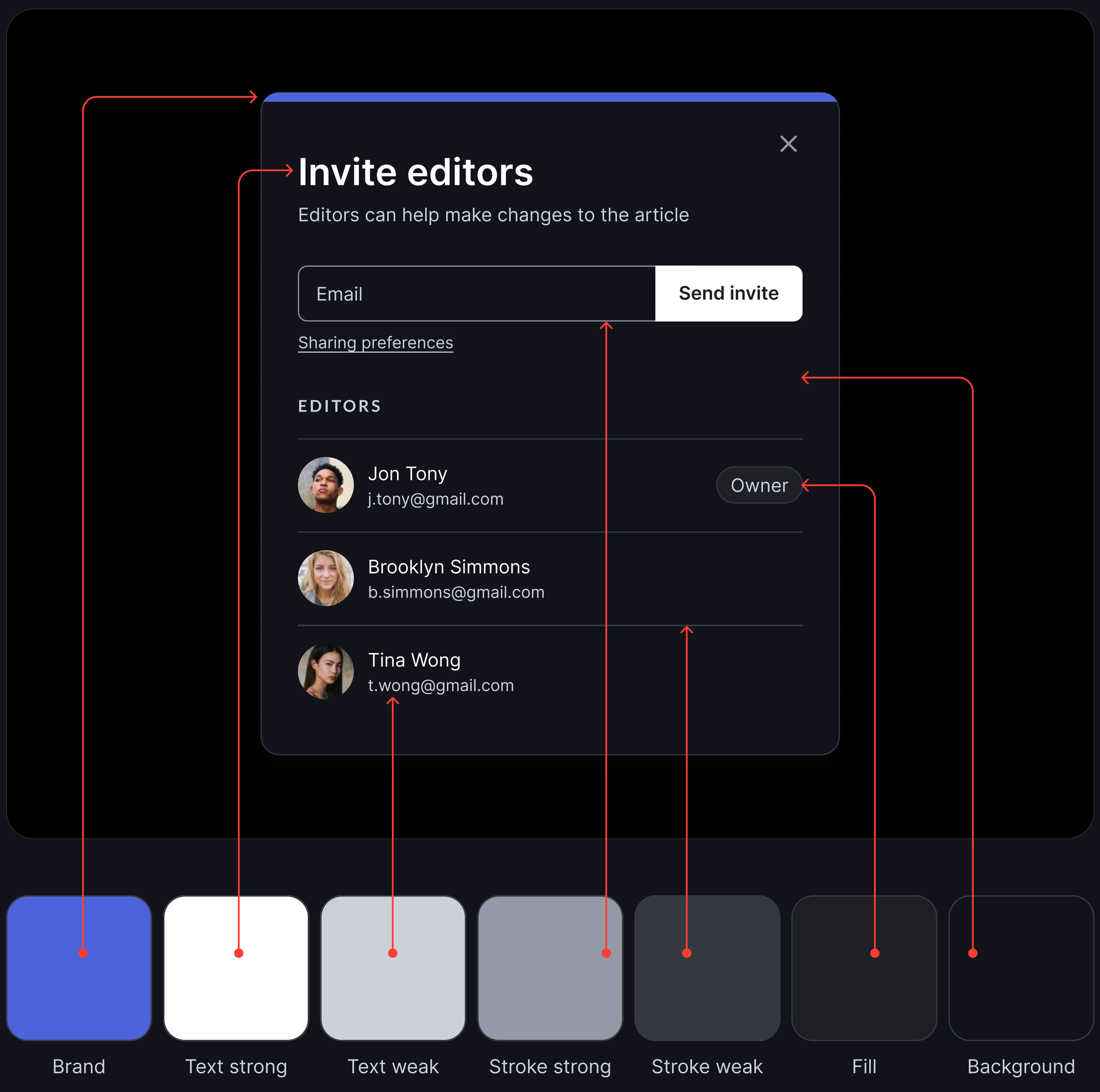


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What if the brand colour has low contrast on a dark background?

In order to use the brand colour on interactive elements like text links and buttons, it needs sufficient contrast. Dark brand colours will generally need to be lightened and desaturated to achieve the required contrast.

If the adjusted colour no longer reflects the brand closely enough, consider using white for interactive elements instead. You can use the brand colour decoratively in other areas to maintain a subtle brand presence.



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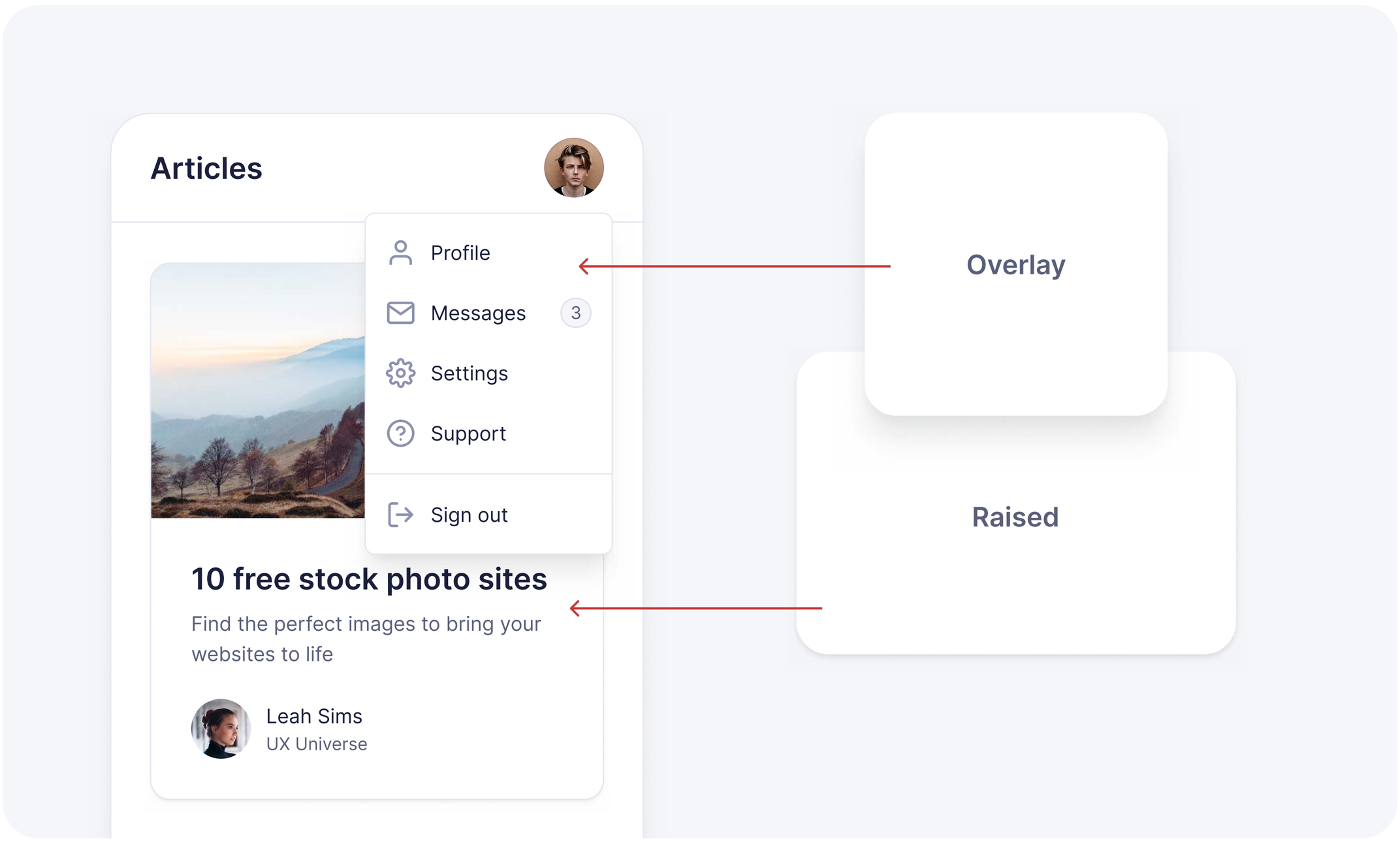
Add depth using colour and shadows

To add depth to an interface, use colour and shadows to raise or lower interface elements to different levels of elevation. Elements with a higher elevation appear closer to you and are more prominent. Those with a lower elevation appear further away and are less prominent.

Define 2 shadow options

Including shadow options in your design system saves time and improves consistency. For most projects you'll only need the following shadow options:

- **Raised** - a small and sharp shadow used to slightly elevate interactive elements like cards.
- **Overlay** - a larger and softer shadow used for elements that float high above the page like dropdown menus and floating dialog boxes.



A predefined set of shadow options

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Some quick tips for creating shadows:

- Use a small and sharp shadow to slightly raise an interface element off the page.
- Use a larger and softer shadow to elevate an interface element higher.
- Make sure the light comes from the top to mimic real world objects.
- Rather than using black for the shadow colour, try using the “Text strong” variation from your predefined colour palette. This will help ensure the shadow fits in with the rest of the interface.

Use colour to indicate depth

Shadows aren’t the only way to add depth to an interface. Light comes from above, so light colours tend to look more elevated than dark ones. Add depth to an interface by placing lighter colours on top of darker colours.

White on white

Cards look less elevated



Sightseeing in San Francisco

Top sightseeing spots in the jewel of Northern California.

Jon Tony
16 Feb 2022



Beautiful Japan

Our curated list of must-see locations that will take your breath away.

Tina Wong
16 Feb 2022



Marvels of China

Discover fascinating, unusual, and adventurous things to do.

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White on grey

Cards look more elevated



Sightseeing in San Francisco

Top sightseeing spots in the jewel of Northern California.

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Beautiful Japan

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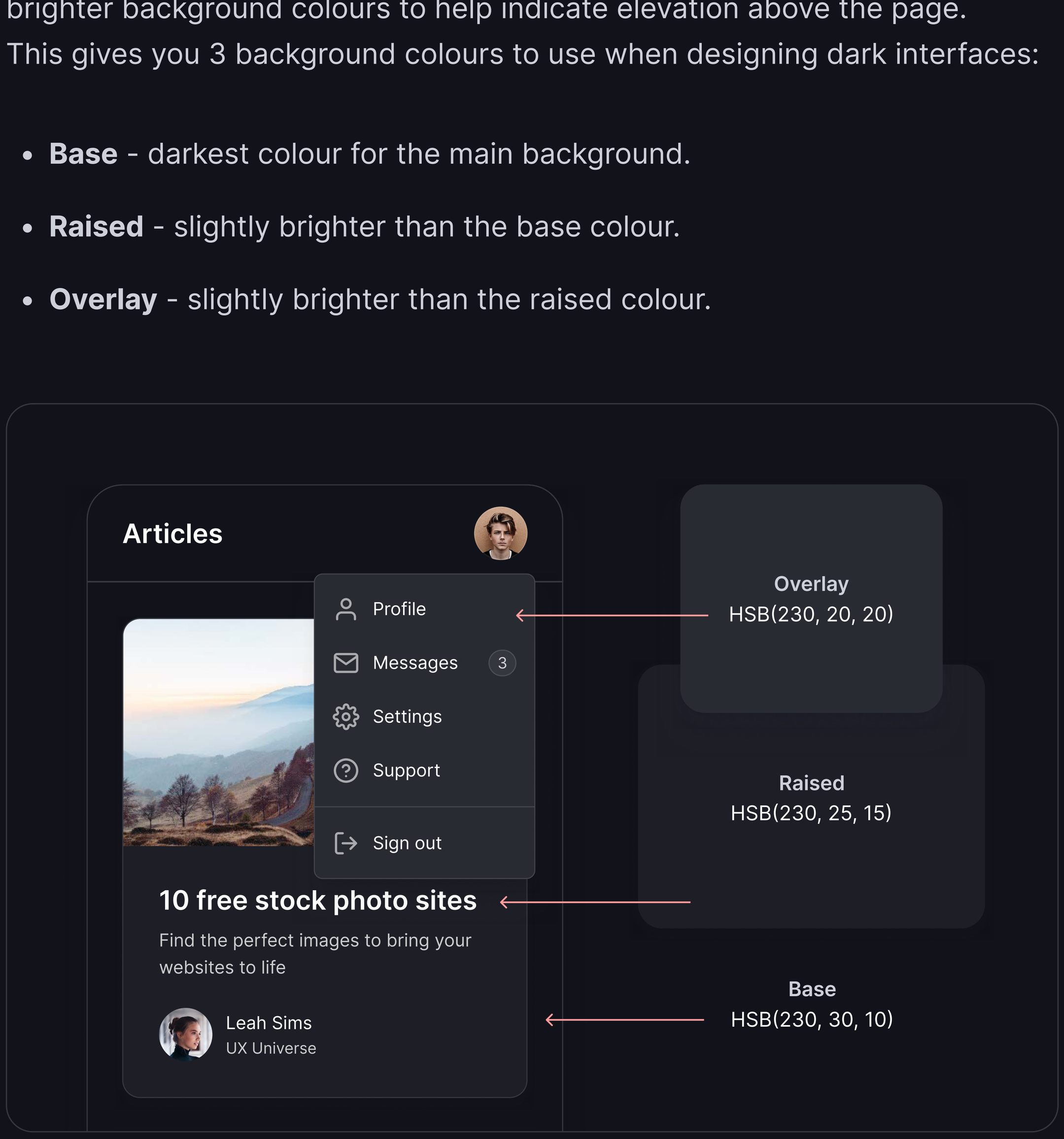
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Adding depth in dark interfaces

Shadows work well to indicate different levels of elevation in light interfaces. However, shadows can be difficult to see in dark interfaces, so you mostly need to rely on colour to indicate depth.

Take your background colour as your base and define 2 progressively brighter background colours to help indicate elevation above the page. This gives you 3 background colours to use when designing dark interfaces:

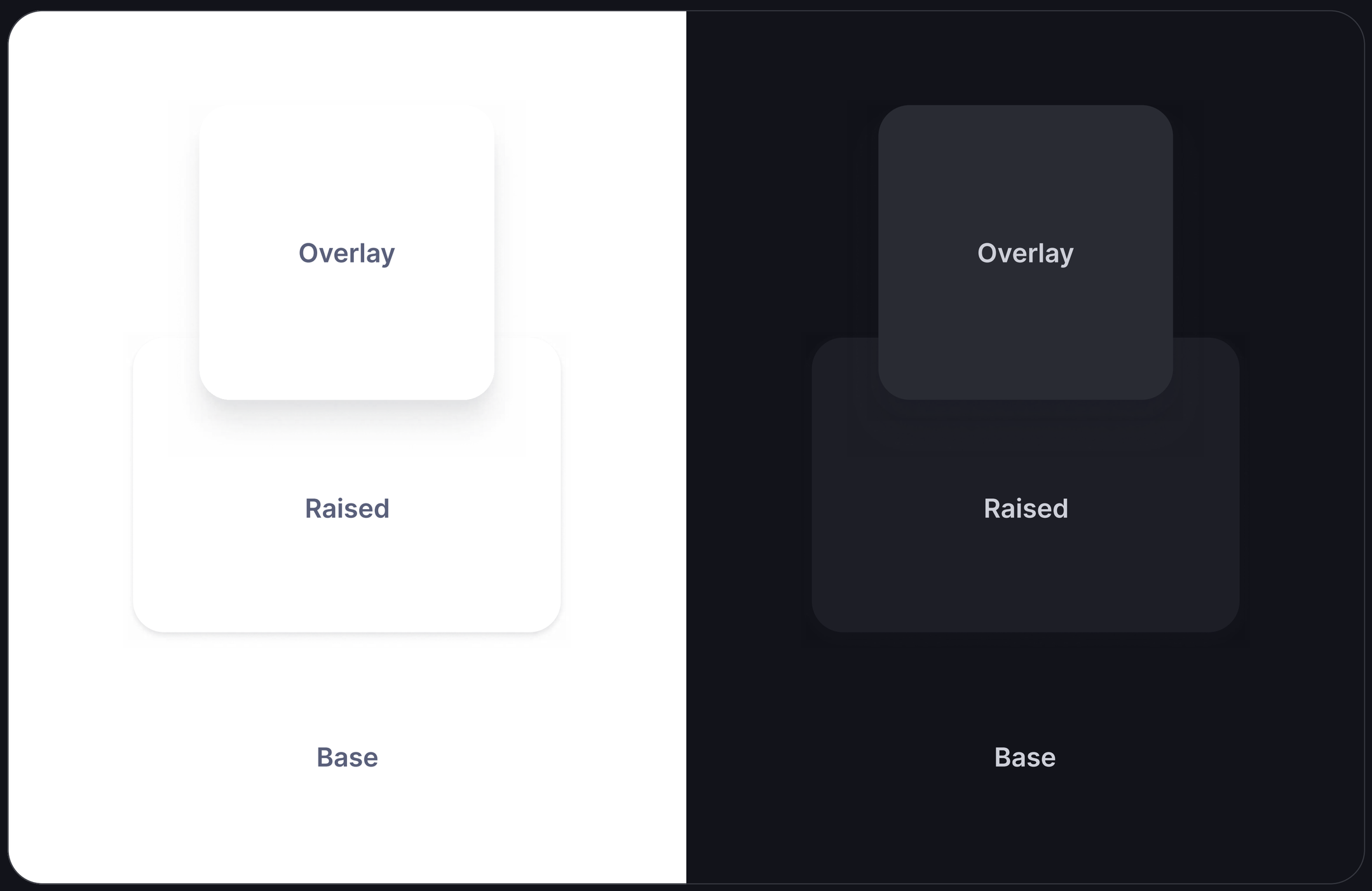
- **Base** - darkest colour for the main background.
- **Raised** - slightly brighter than the base colour.
- **Overlay** - slightly brighter than the raised colour.



3 levels of elevation in dark interfaces

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If you’re designing an interface that supports switching between light and dark mode, make sure each level of elevation looks consistent across modes.



3 levels of elevation across light and dark mode

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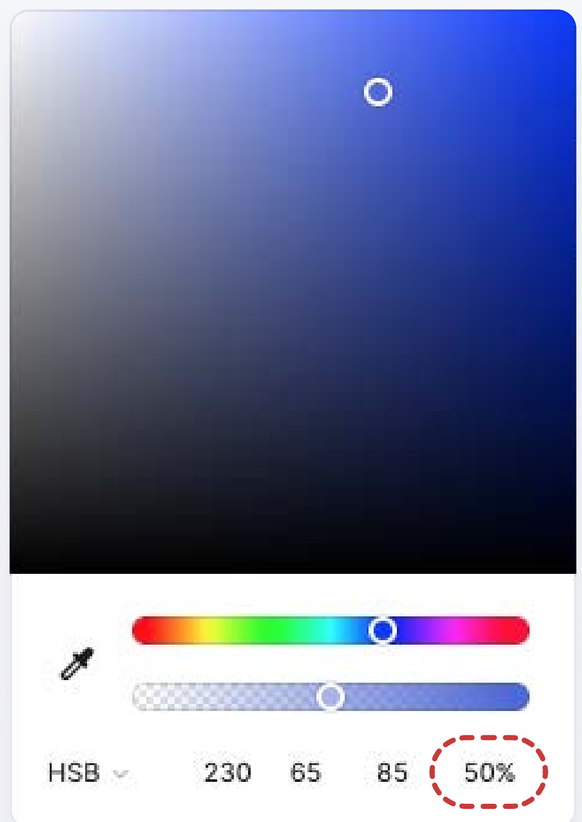
Consider using transparent colours

Solid colours have an opacity of 100%, which means that you can’t see through them. Lowering the opacity of a colour makes it more transparent or see-through.

There’s actually a 4th value in the HSB colour system that controls the opacity of a colour. It’s known as the “alpha” value and it’s represented by the letter “A”. It can have a value from 0 to 1, with 1 being 100% opacity.

Control opacity using the “alpha” value

HSBA(230, 70, 80, 0.5)



Colour picker using the HSBA colour system

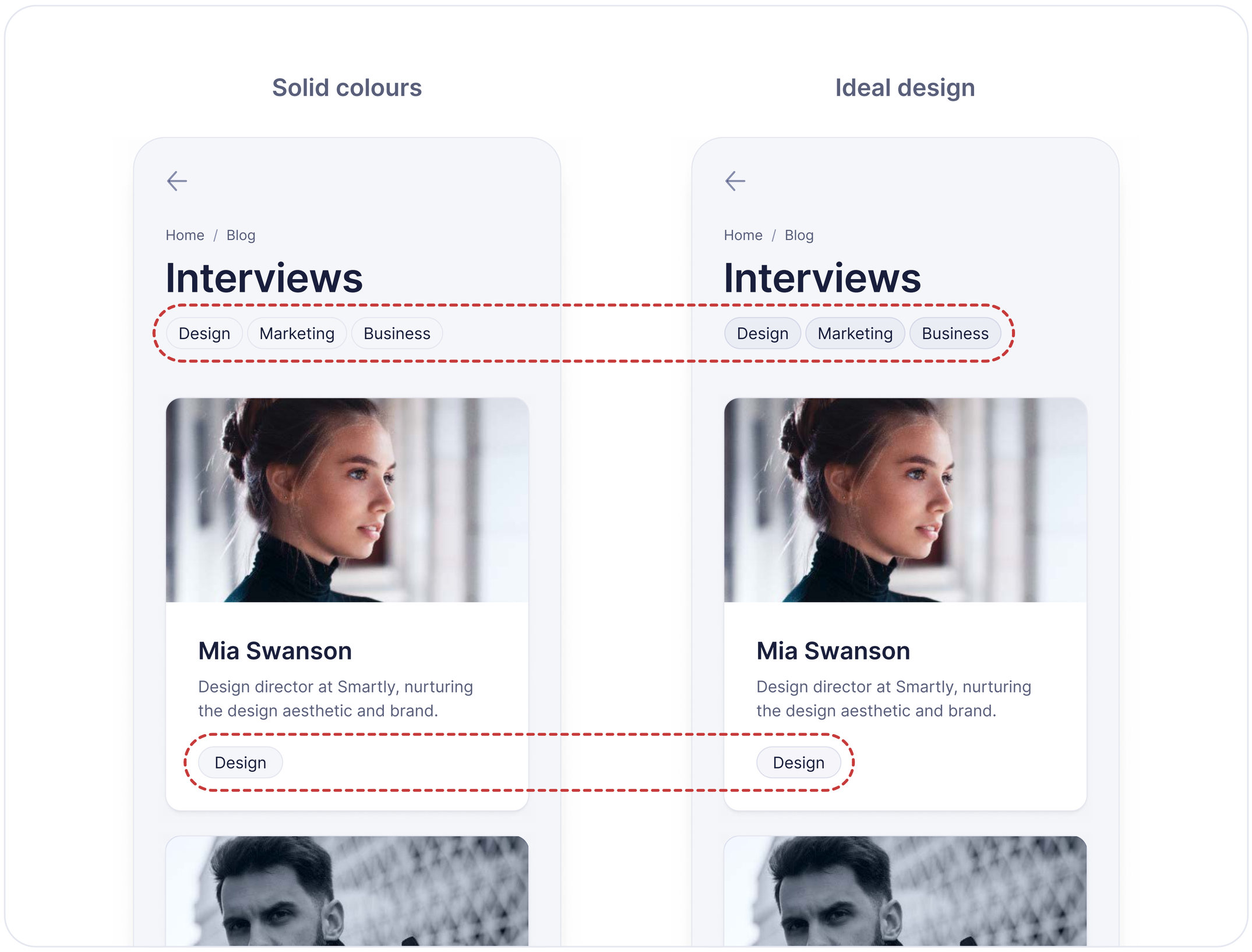
Now that you know what transparent colours are, here’s why you should consider using them. As you design more complex websites and apps, you may start to notice an issue with the solid colour palette you just created. It’s not a problem unique to this colour palette, but rather a limitation of any colour palette that relies solely on solid colours. All solid colour palettes generally suffer from the same problem.

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The problem with solid colours

The main advantage of solid colours is actually their main problem. Solid colours remain the same regardless of the background they sit on. Let’s look at why this can be problematic.

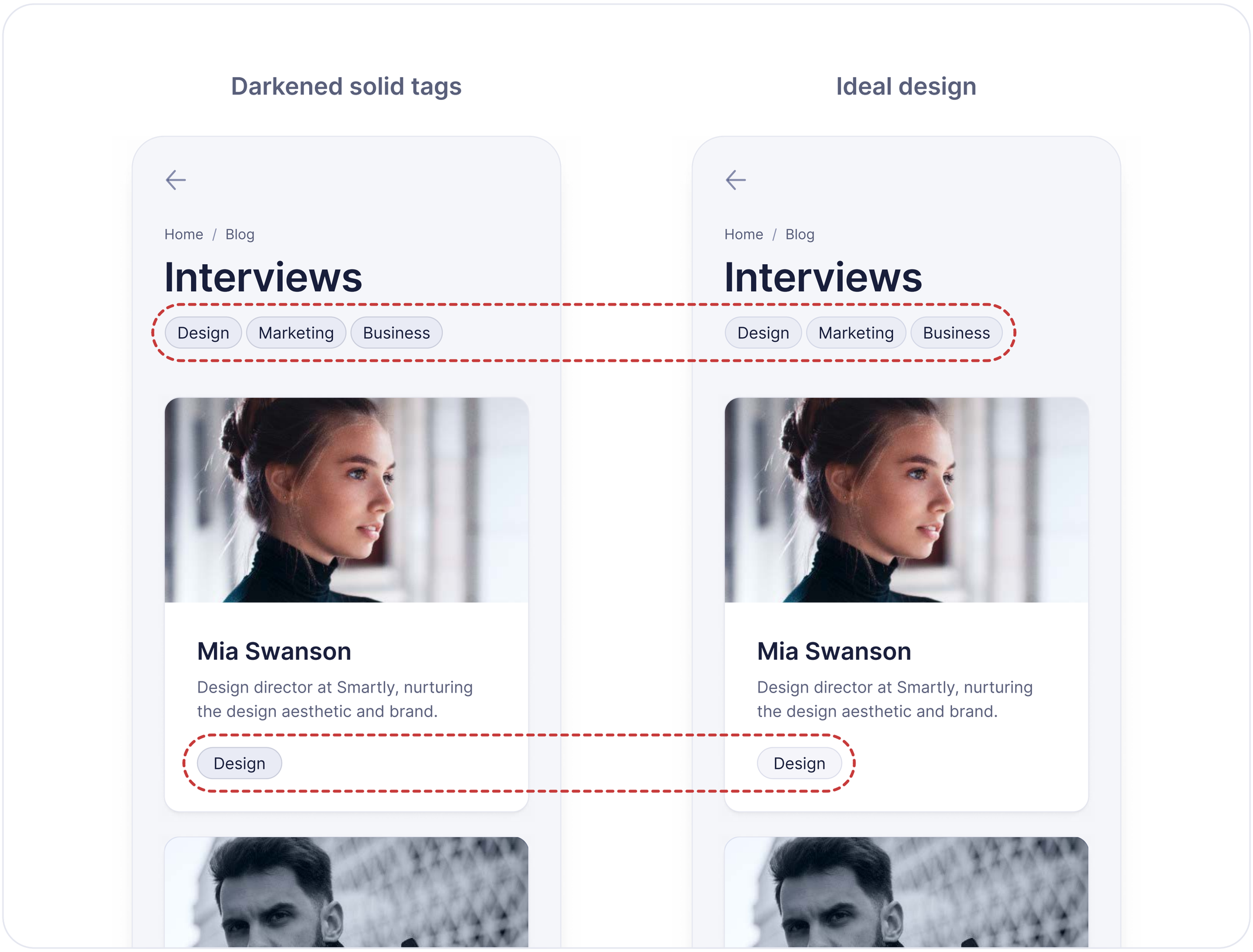
In the following example, some tags (small pill-shaped elements used to categorise or label content) sit on a white background, while others sit on a grey background. Tags with a solid grey fill look less prominent on the grey background, which affects their visual hierarchy. Ideally, these tags should always look slightly more prominent than the background they sit on to help them stand out.



Tags using solid colours are less prominent on a grey background

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You might consider simply darkening the tag component to account for the grey background. This is a common compromise, but it makes tags considerably darker on white backgrounds.

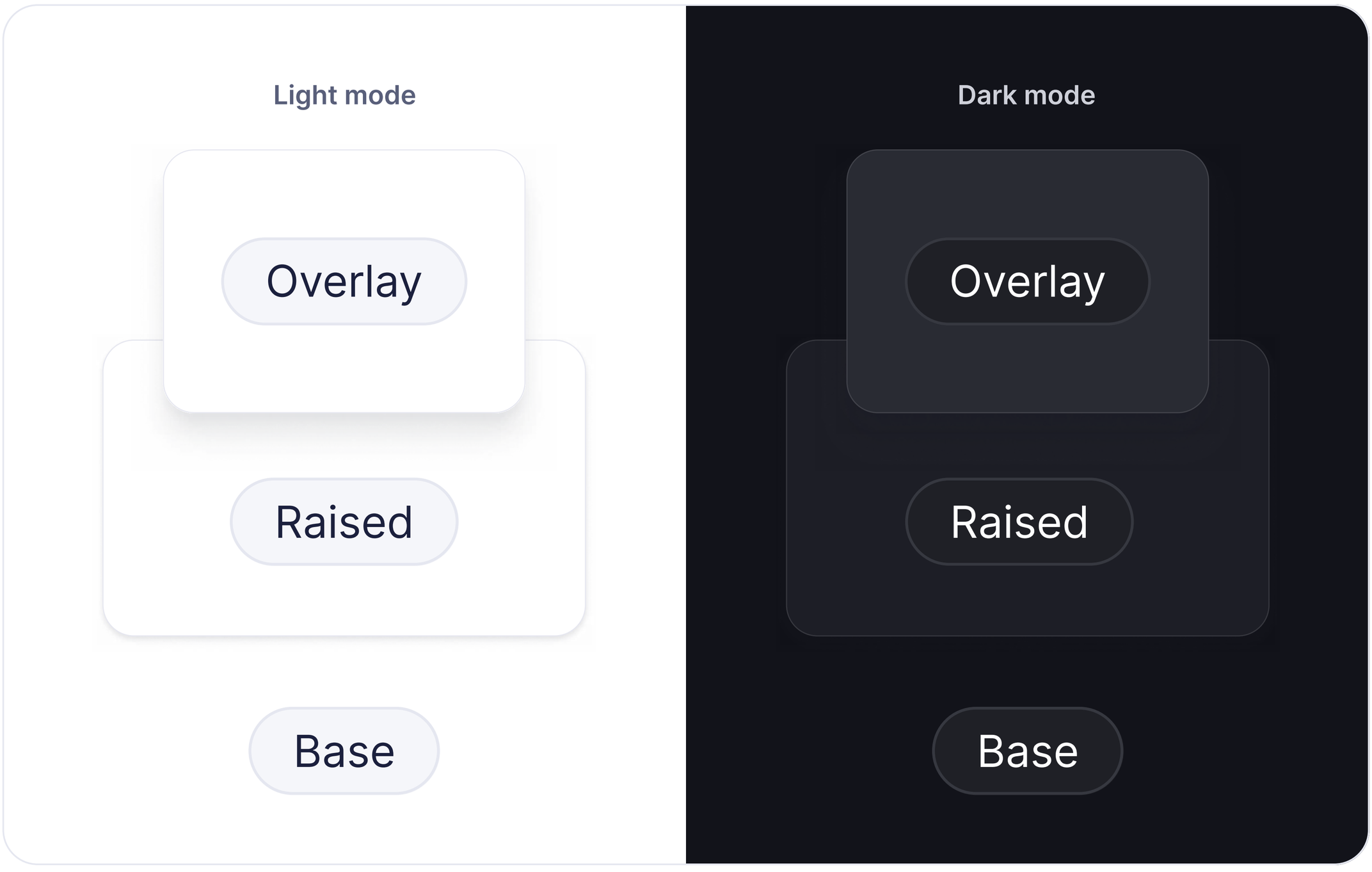


Tags are darkened to account for the grey background

Depending on your design, you might also be able to lighten the background colour to avoid the issue. But what if you have other background colours you need to support?

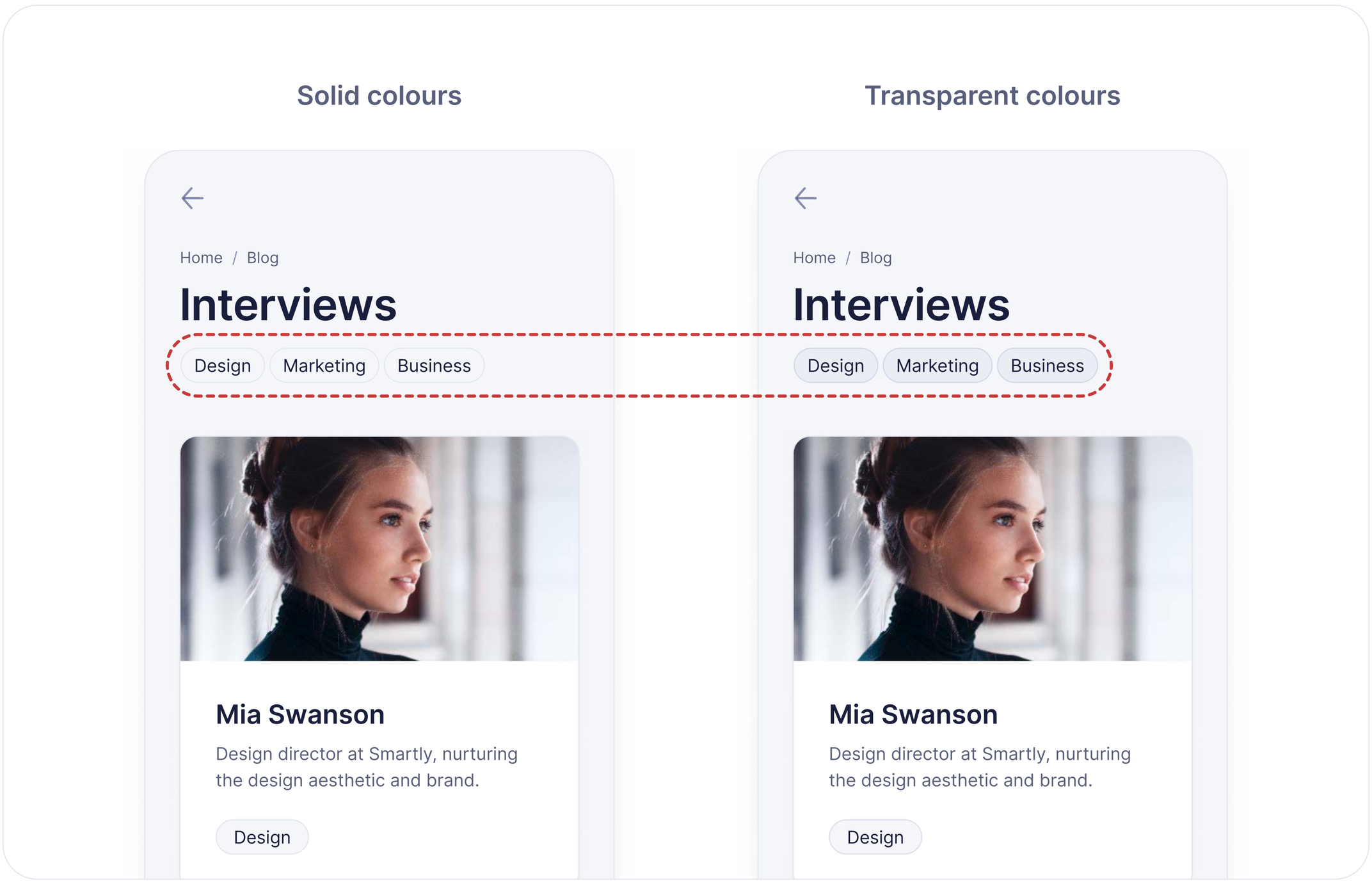
Dark interfaces are especially problematic, as they generally have at least 3 different background colours. One for each level of elevation. It can be very difficult to ensure that foreground elements, like tags, have a similar prominence on each level of elevation. The following example demonstrates this issue.

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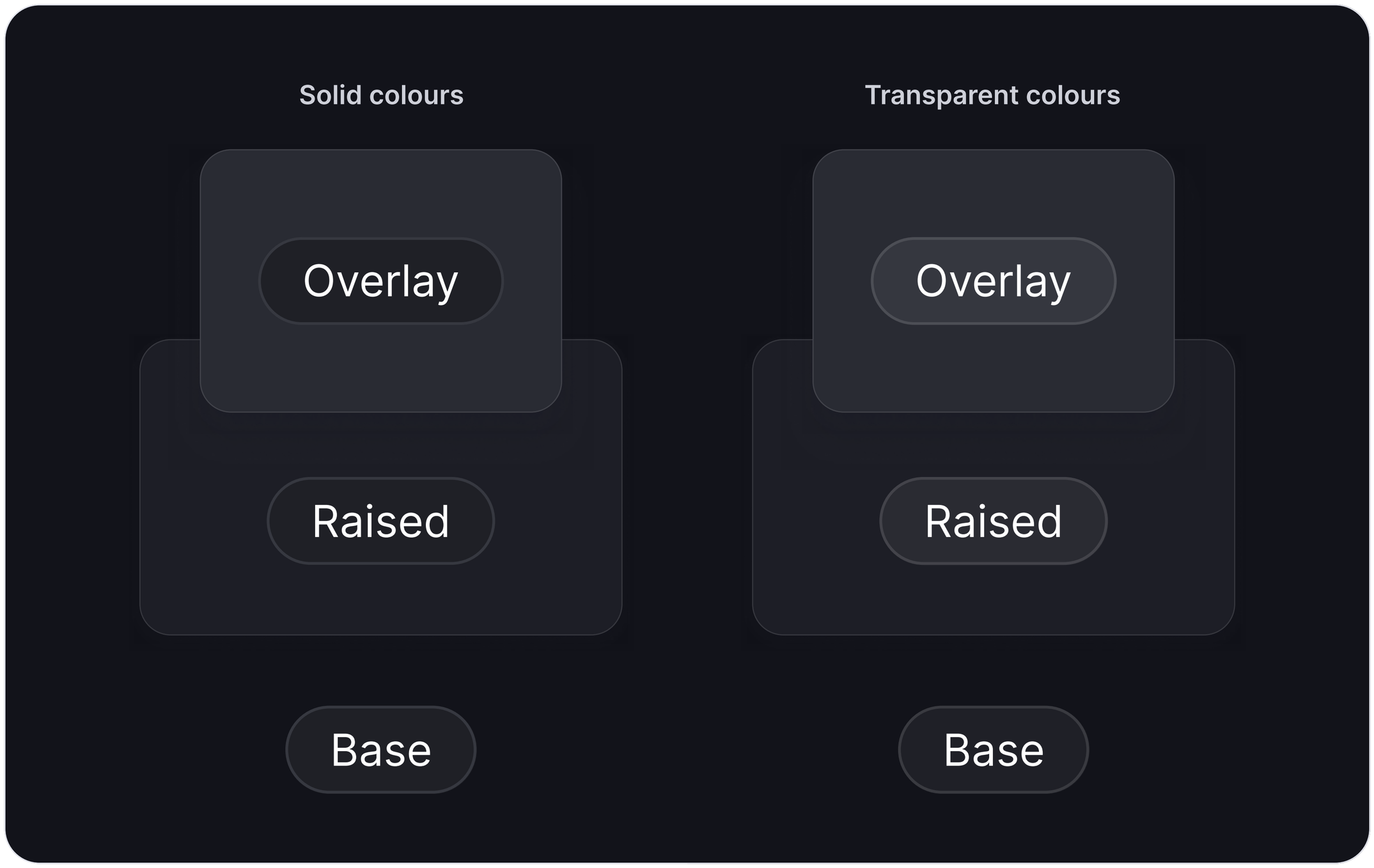
Solid tags have varied prominence on different backgrounds in dark mode

To solve this issue, foreground elements need to take their background into account. This is where transparent colours can help.



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Using varying levels of transparency on foreground elements, like the tags in the example, allows some of the background colour to mix with the foreground colour. This layering of colour gives us the result we’re after.



Transparent colours result in similar prominence on all backgrounds in dark mode

Depending on the complexity of your project, solid colours may be sufficient. For those who need a more scalable colour system, consider adding a transparent colour palette. Transparency can also be helpful if you’re planning on creating multiple themes with different background colours.

For the best of both worlds, you could include both a solid and transparent colour palette in your design system. Include usage guidelines to help ensure colours are used consistently and correctly.

You’ll create a transparent colour palette that supports both light and dark mode next.

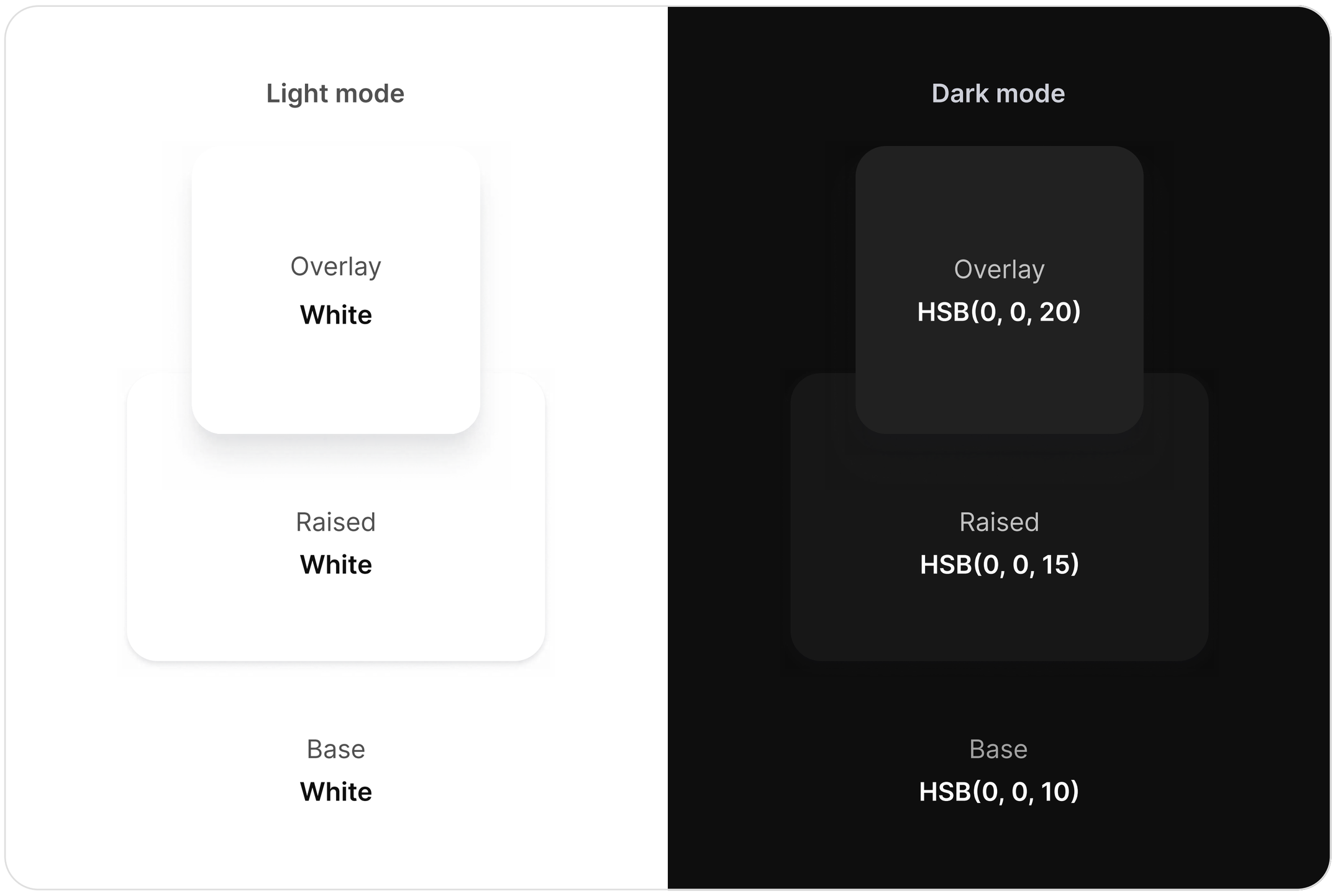
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Create a transparent colour palette

As demonstrated previously, using transparent colours on foreground elements can help ensure they maintain a consistent level of prominence on different background colours. Let’s create a transparent colour palette that supports switching between light and dark mode. To keep things simple, we’ll create neutral variations of grey using black and white.

Define 3 solid background colours

Before you can create your transparent foreground colours, you need to define the solid background colours that they’ll sit on. As you learned previously, you’ll need 3 background colours to indicate elevation in dark mode. Define 3 progressively brighter solid background colours for dark mode. Use white backgrounds for light mode.



Background colours across light and dark mode

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Define transparent foreground colours

Now it’s time to define the transparent foreground colours that will sit on the backgrounds. We’ll use varying transparencies of white for dark mode and varying transparencies of black for light mode.

Foreground colours are used on elements that sit on top of background surfaces. Text, icons, and form inputs are all foreground elements.

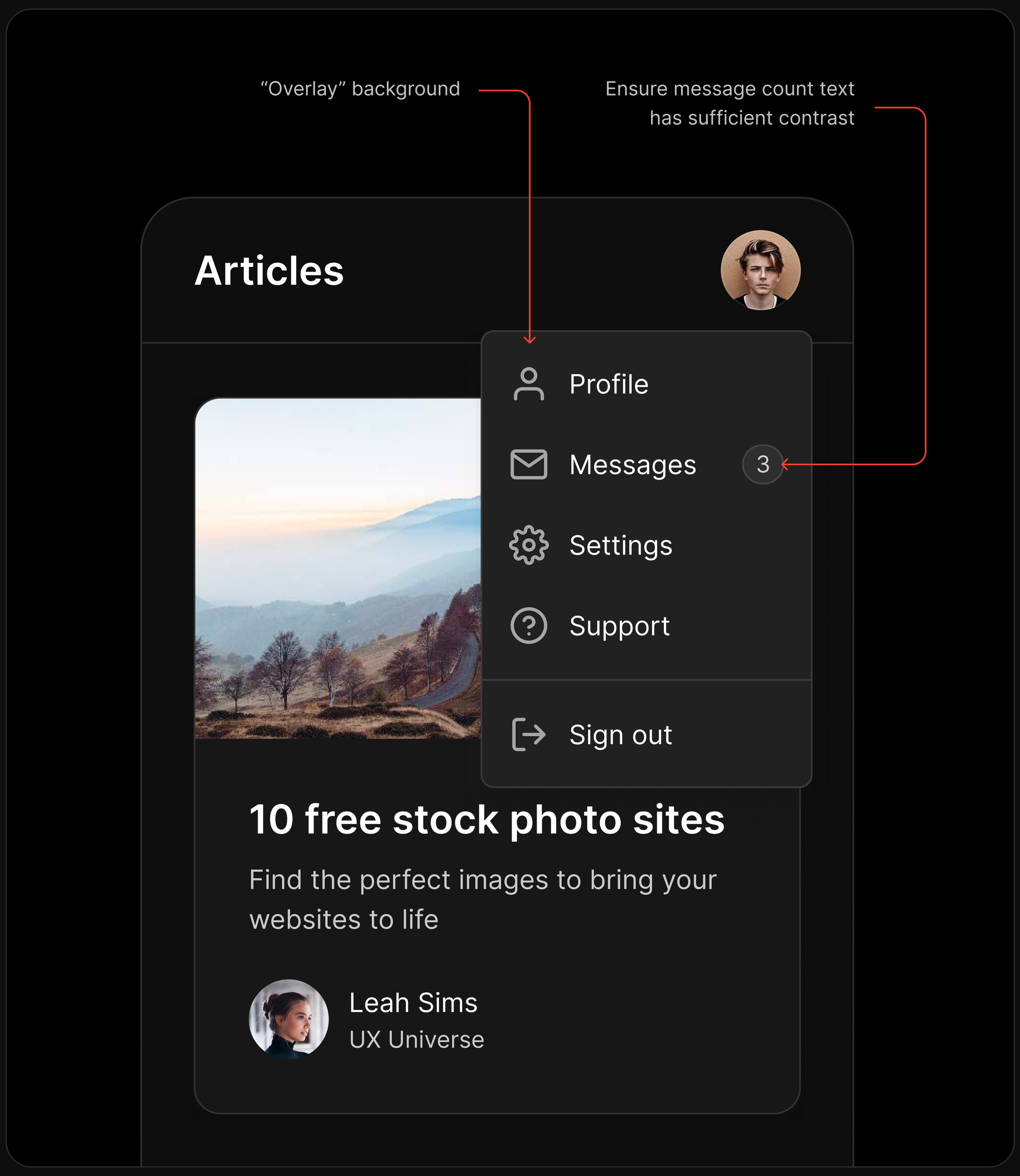
Define 5 variations of white for dark mode

Start with white and gradually lower its opacity to create 4 other variations. These will be your greys. Use the following opacities or define your own.

Text strong 100% opacity	Contrast with fill on overlay background must be at least:	4.5 : 1
Text weak 78% opacity	Contrast with fill on overlay background must be at least:	4.5 : 1
Stroke strong 60% opacity	Contrast with fill on overlay background must be at least:	3 : 1
Stroke weak 12% opacity	This is a decorative colour, so it doesn’t need to be high contrast.	
Fill 6% opacity	Text and interface elements sitting on this colour must have sufficient contrast	

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Ensure foreground colours used for text and interface elements have sufficient contrast. Test the contrast of these colours against the “overlay” background. It’s the brightest, so foreground elements sitting on this background will have the lowest contrast. If you have any elements with a “fill” colour, like the message count in the following example, test the contrast of the text inside them. The “fill” layer sitting on top of the “overlay” background produces an even brighter colour.



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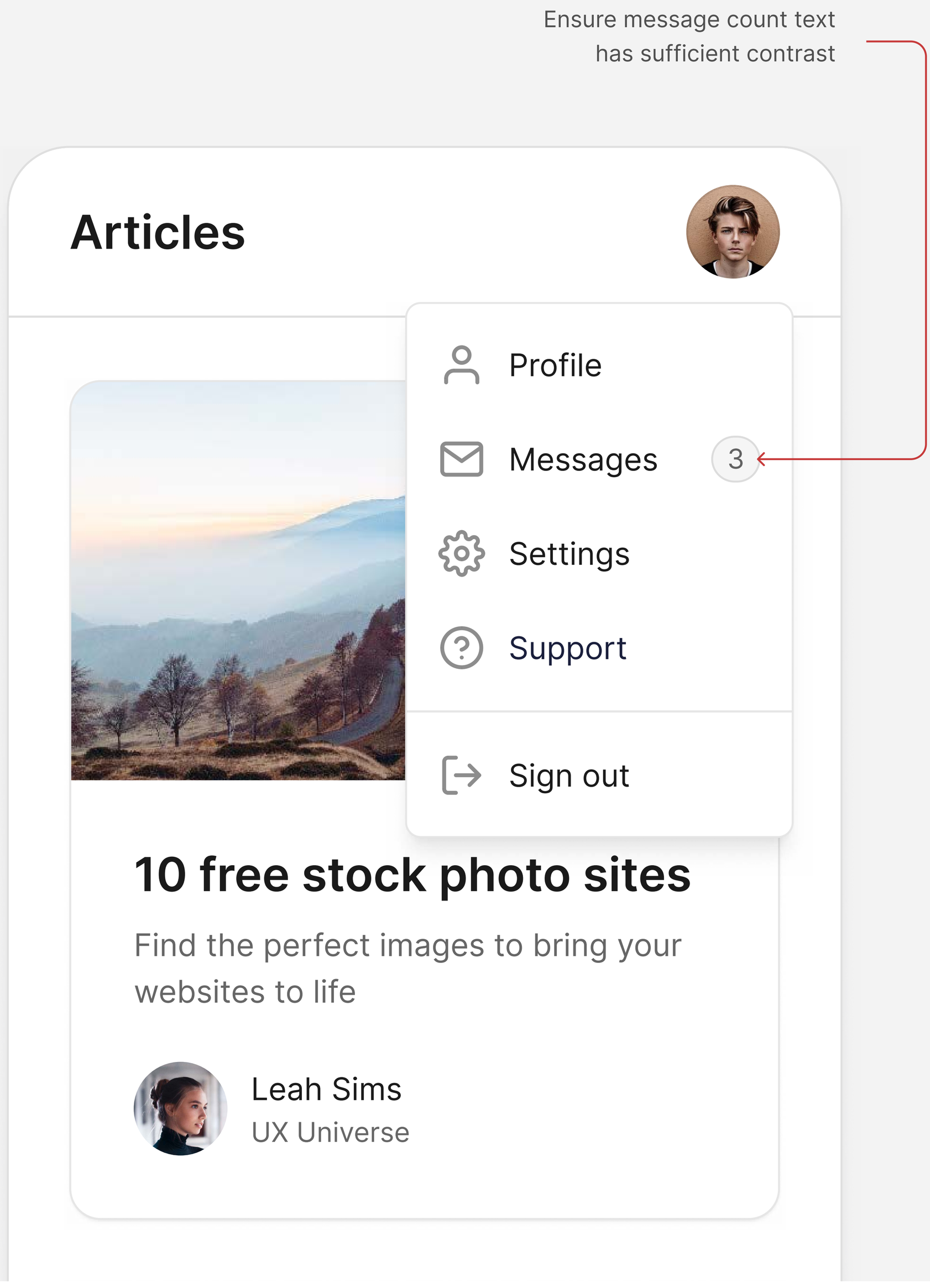
Define 5 variations of black for light mode

It’s safest to avoid pure black against white for text, as it can cause eye strain and fatigue. Instead, lower the opacity slightly to create a dark grey. Continue to gradually lower the opacity to create 4 other variations. These will be your foreground greys in light mode. Use the following opacities or define your own.

Text strong 90% opacity	Contrast with fill on background must be at least:	**4.5 : 1**
Text weak 60% opacity	Contrast with fill on background must be at least:	**4.5 : 1**
Stroke strong 45% opacity	Contrast with fill on background must be at least:	**3 : 1**
Stroke weak 10% opacity	This is a decorative colour, so it doesn’t need to be high contrast.	
Fill 4% opacity	Text and interface elements sitting on this colour must have sufficient contrast	

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Again, ensure foreground colours used for text and interface elements have sufficient contrast. This time you simply need to test them against a white background. If you have any elements with a “fill” colour, like the message count in the following example, test the contrast of the text inside them.

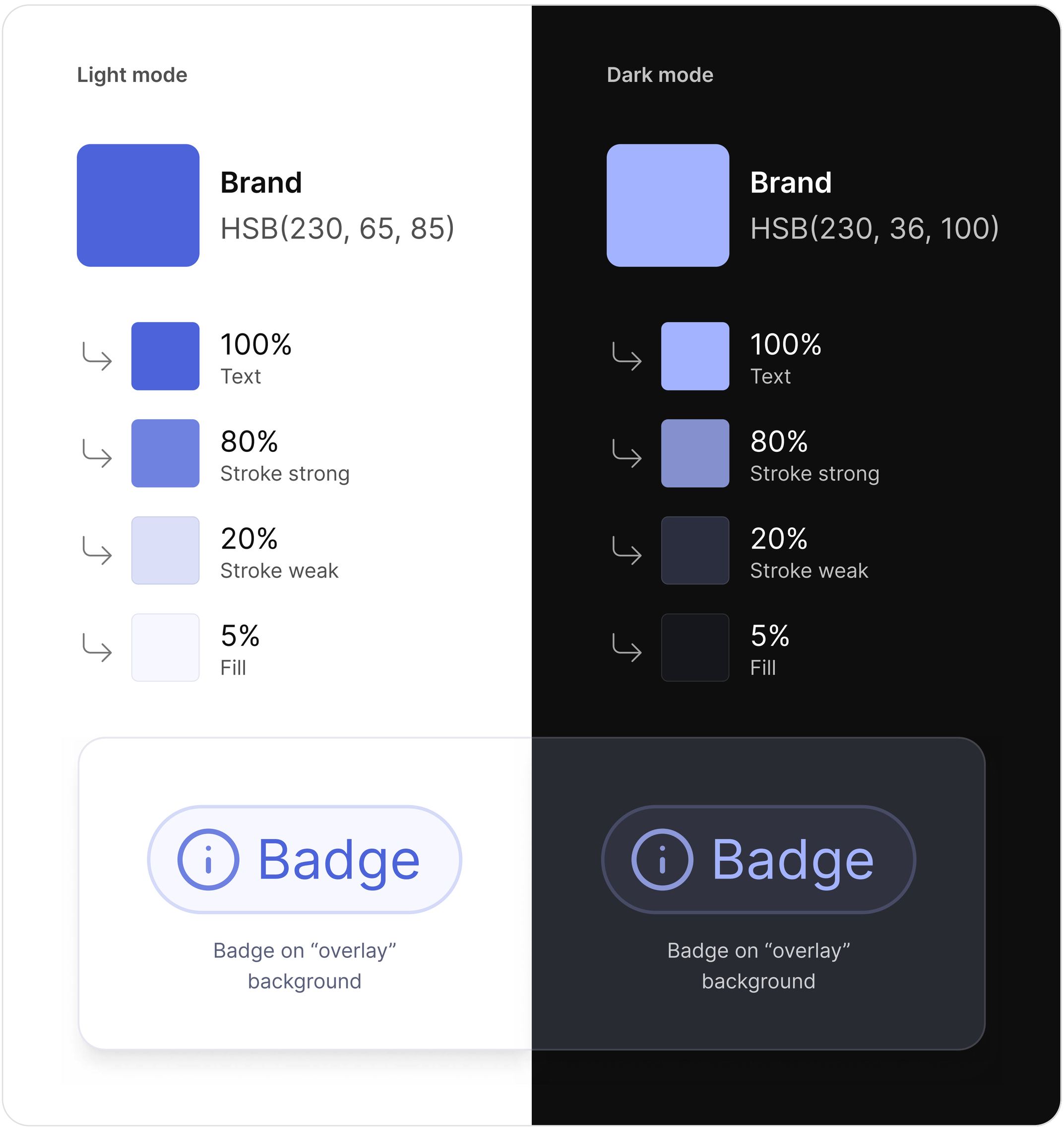


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Define 4 variations of the brand colour

Depending on your design, you'll generally need 4 variations of the brand colour for foreground elements in both light and dark mode. Start with the brand colour and gradually lower its opacity to create 3 other variations.

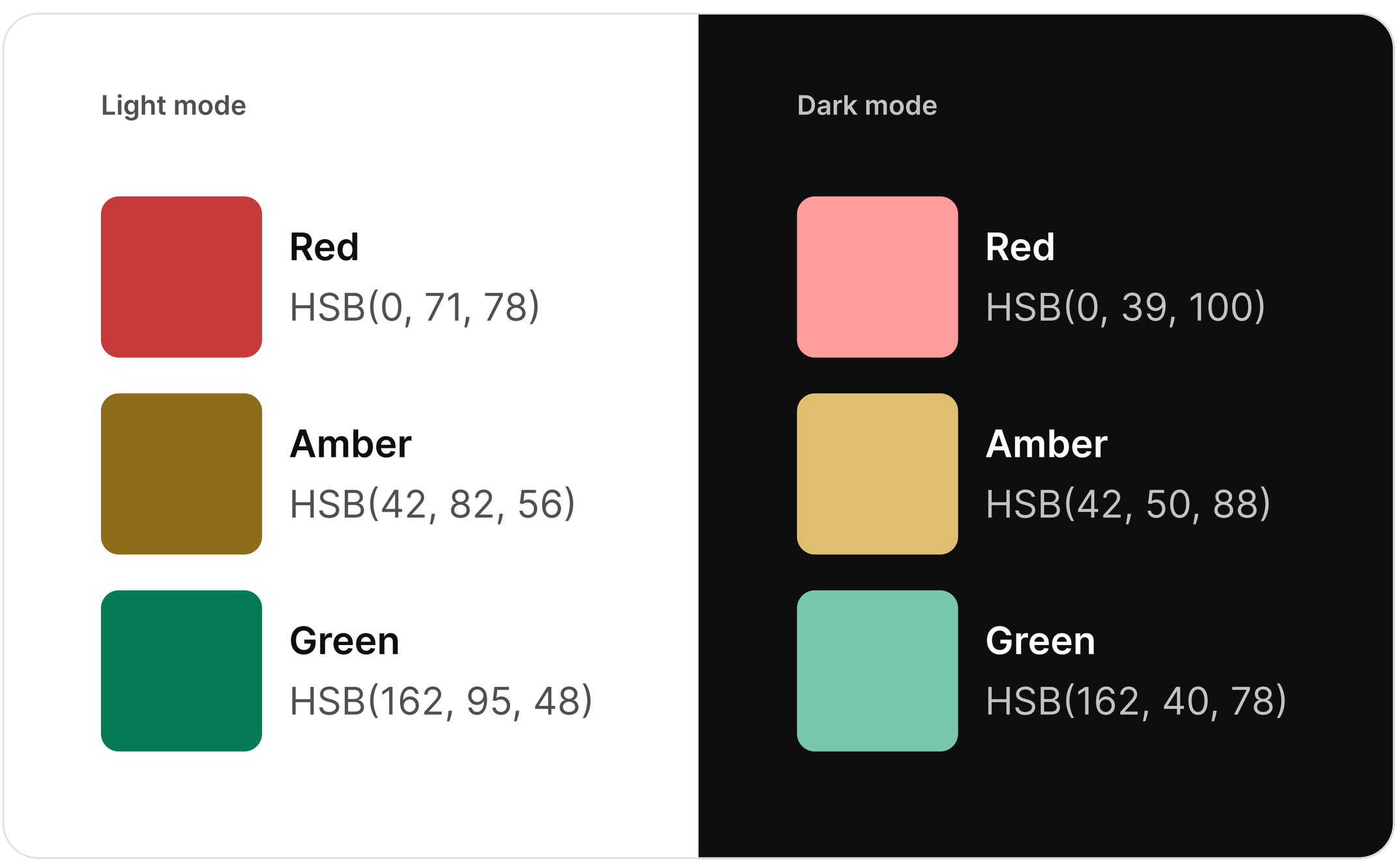
Ensure foreground colours used for text and interface elements have sufficient contrast against the "overlay" background, as it's the brightest. If you have any elements with a "fill" colour, like the badge in the following example, test the contrast of the text and icon inside them.



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Define 4 variations of system colours

You'll generally need 3 system colours to indicate errors, warnings, and success states. Traffic light colours (red, amber, and green) are commonly used for system colours, as they already have familiar meanings associated with them. Define 3 system colours for both light and dark mode.



3 system colours in light and dark mode

Each system colour needs 4 variations in both light and dark mode. Again, ensure foreground colours used for text and interface elements have sufficient contrast against the "overlay" background. If you have any elements with a "fill" colour, test the contrast of the text inside them. Use the following opacities or define your own:

- **100% opacity** - Text (needs 4.5:1 contrast)
- **80% opacity** - Stroke strong (needs 3:1 contrast)
- **20% opacity** - Stroke weak
- **5% opacity** - Fill

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Light mode

Red
HSB(0, 71, 78)

100%
Text

80%
Stroke strong

20%
Stroke weak

5%
Fill

Dark mode

Red
HSB(0, 39, 100)

100%
Text

80%
Stroke strong

20%
Stroke weak

5%
Fill

Light mode

Amber
HSB(42, 82, 56)

100%
Text

80%
Stroke strong

20%
Stroke weak

5%
Fill

Dark mode

Amber
HSB(42, 50, 88)

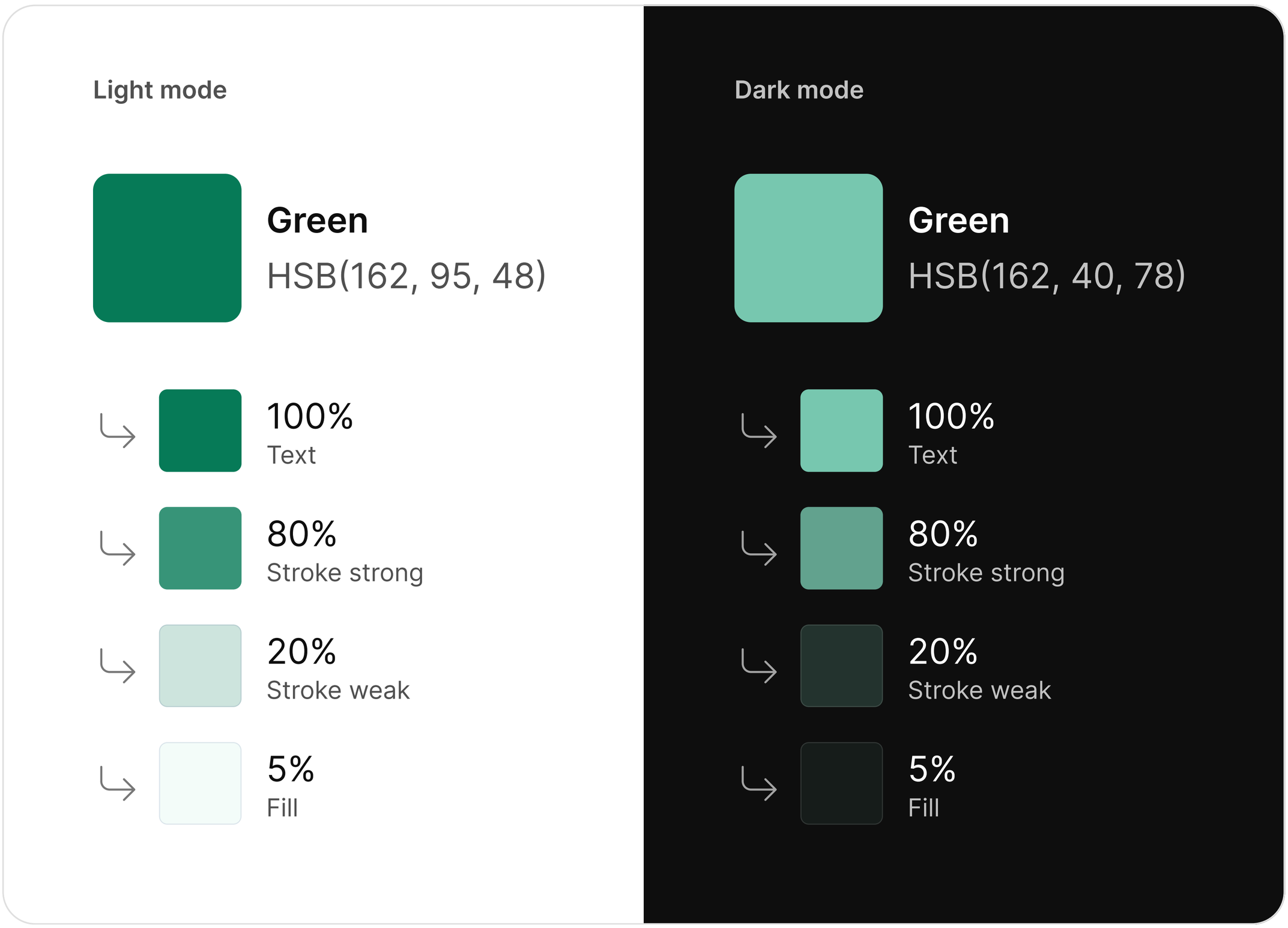
100%
Text

80%
Stroke strong

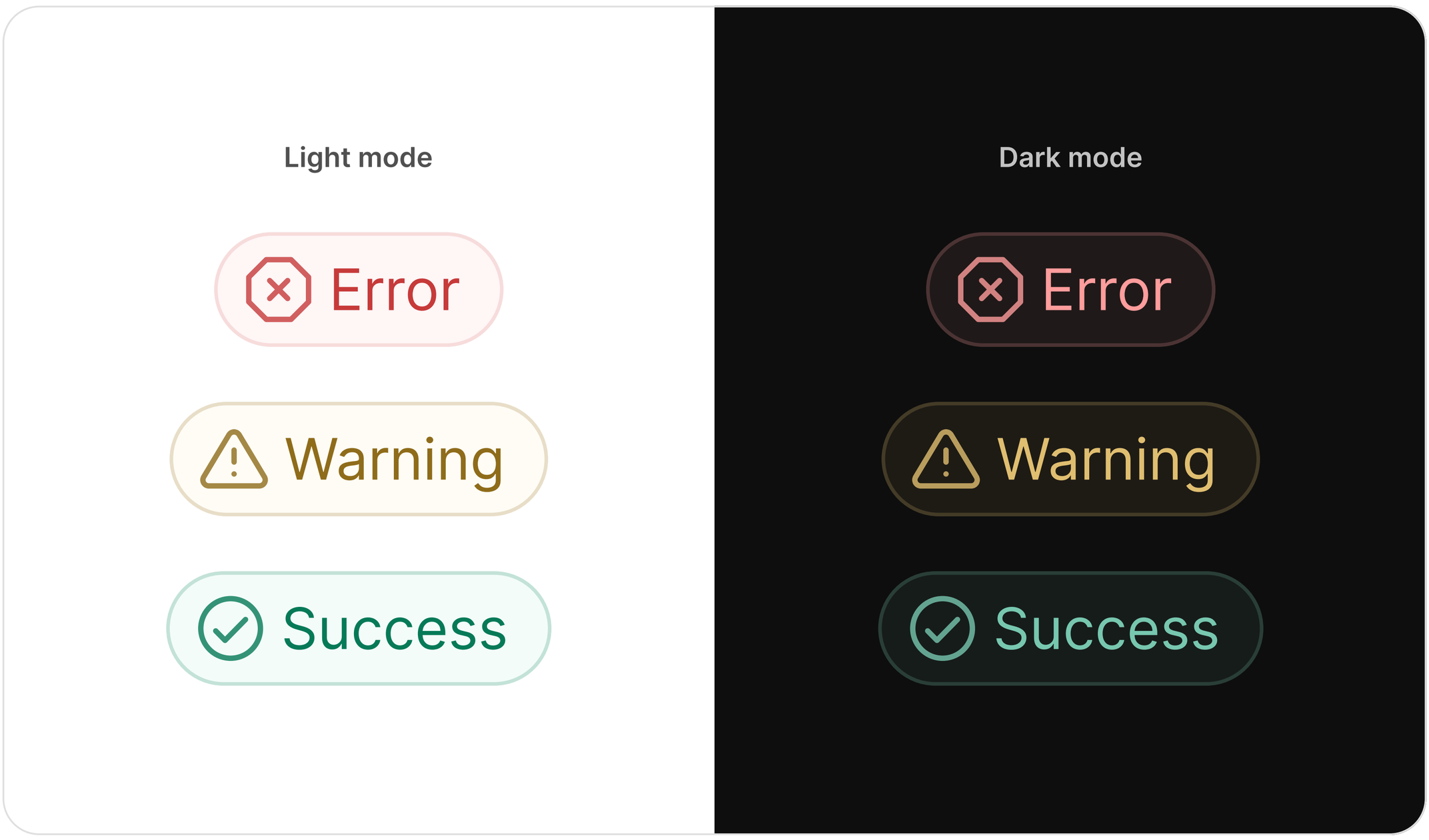
20%
Stroke weak

5%
Fill

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You may need to adjust the opacities slightly to ensure consistent contrast across all colours. Increase the brightness for the “fill” variation to help avoid it looking muddy or dull.

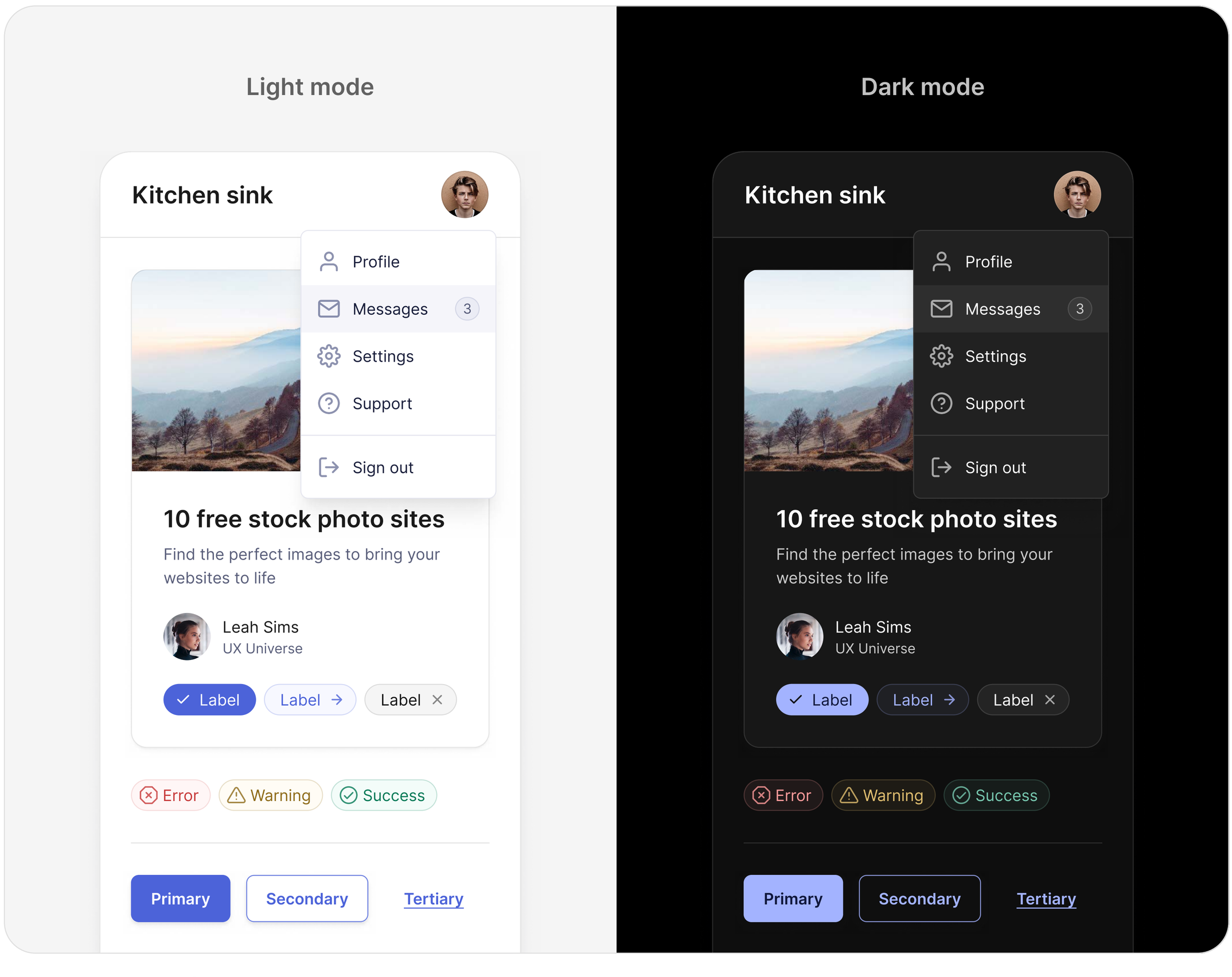


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Test your colour palette

You've already tested that the colours have sufficient contrast, but it's also important to make sure they work well together. Test your colour palette using an interface example that contains all colour variations.

The interface doesn't need to make sense, as you're just looking at colours. Try to also ensure consistency between light and dark mode.

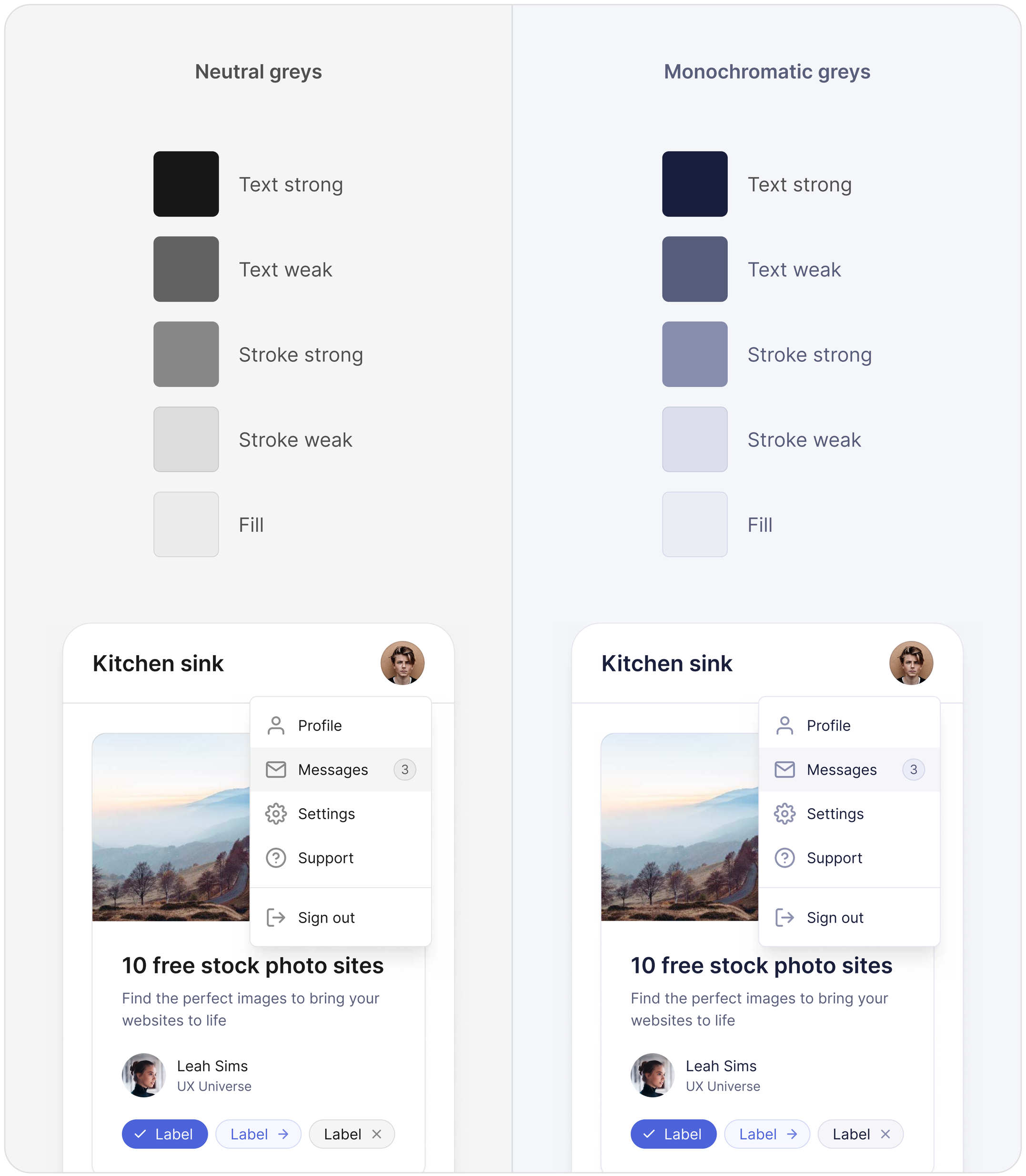


Example interface containing all colours

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Neutral versus monochromatic greys

Now that you know how to create a neutral transparent colour palette, it's easy to move to monochromatic greys, if that's your preference. There's nothing wrong with neutral greys though. They work well with any brand colour or content and have a subtle warmth.



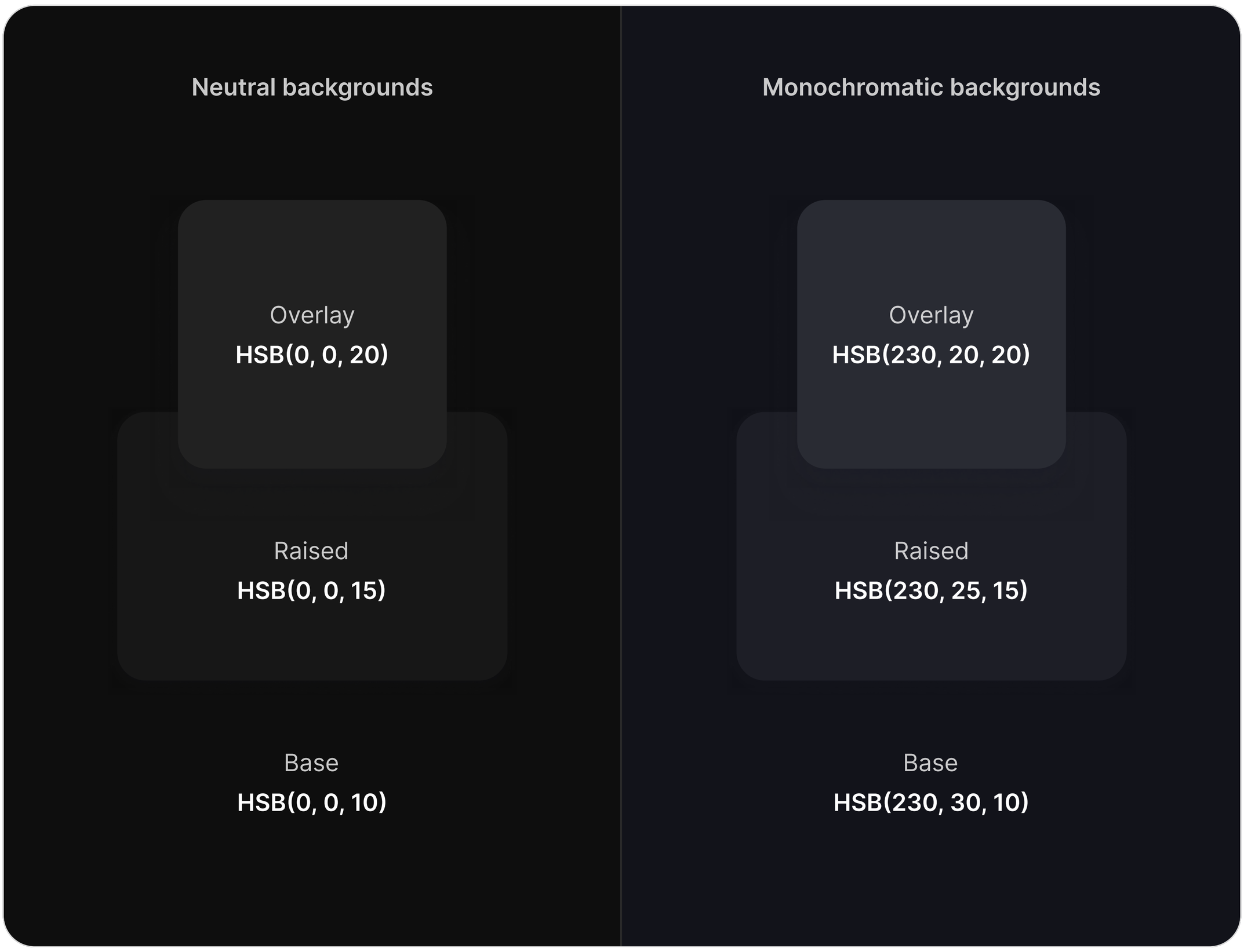
Comparison of neutral and monochromatic greys

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Creating a monochromatic transparent colour palette

In dark mode, simply add a tinge of the brand colour to the background colours. For each background colour, change the hue to the brand colour and saturate it slightly.

There’s no need to change the foreground white variations. Because they’re transparent, you’ll be able to see some of the background colour through them anyway.



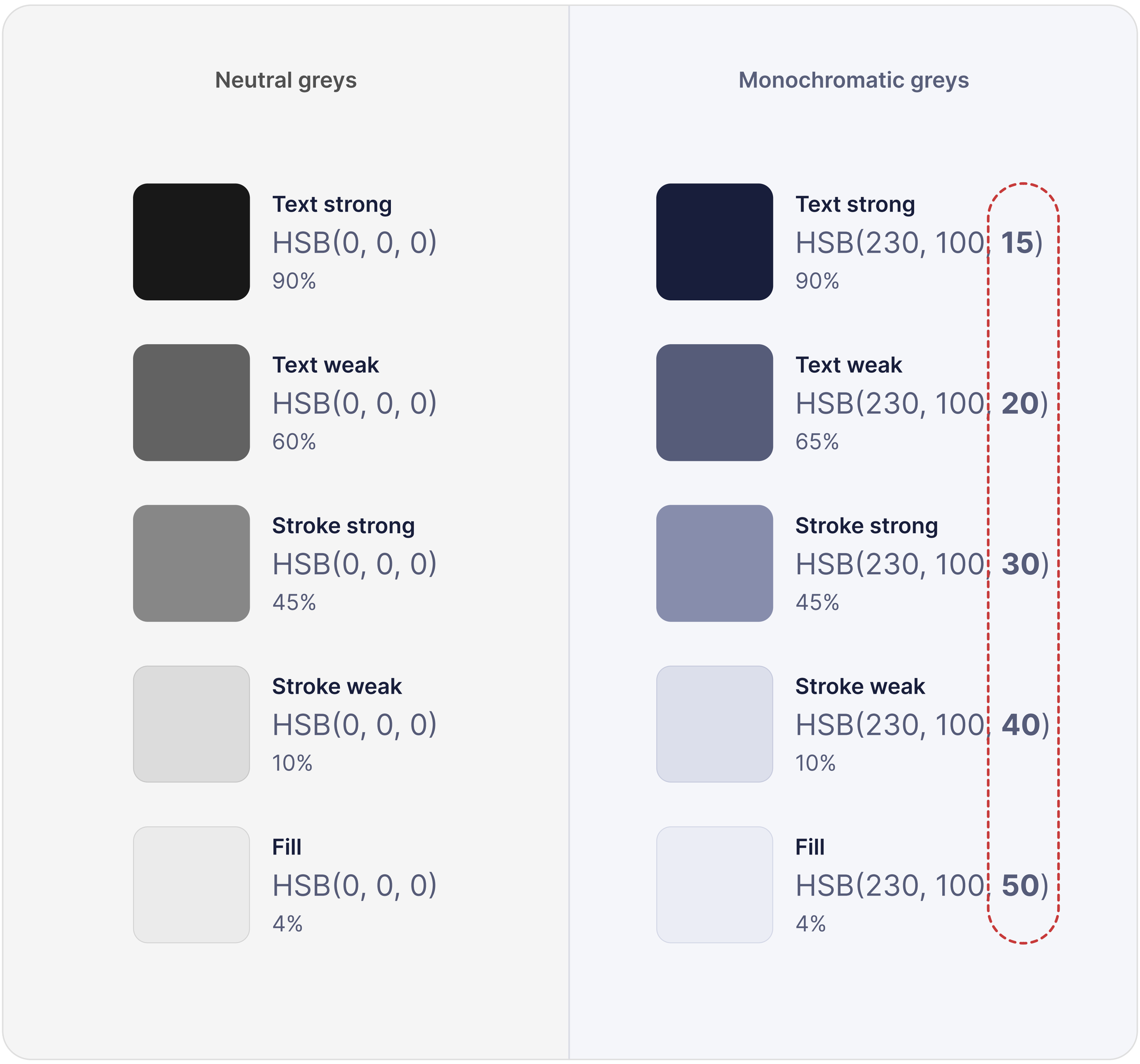
Comparison of neutral and monochromatic background colours

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In light mode, rather than using different opacities of black for foreground colours, add a tinge of the brand colour.

For each foreground variation of black, change the hue to the brand colour and the saturation to 100. Start with a low brightness for the “Text strong” variation and gradually increase it for weaker variations.

As always, make sure colour variations used for text and interface elements have sufficient contrast.



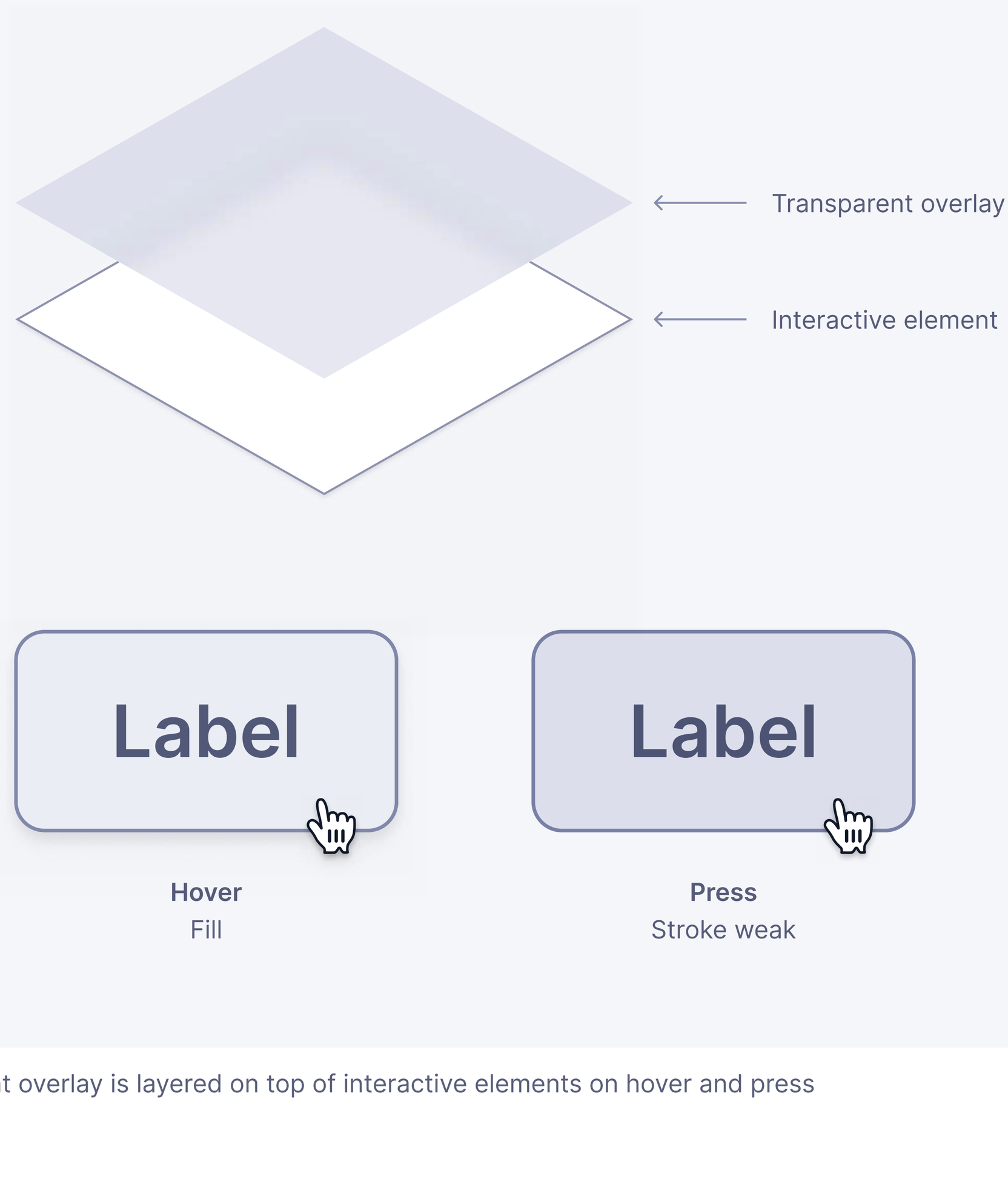
Comparison of neutral and monochromatic greys

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Use transparent layers for interaction states

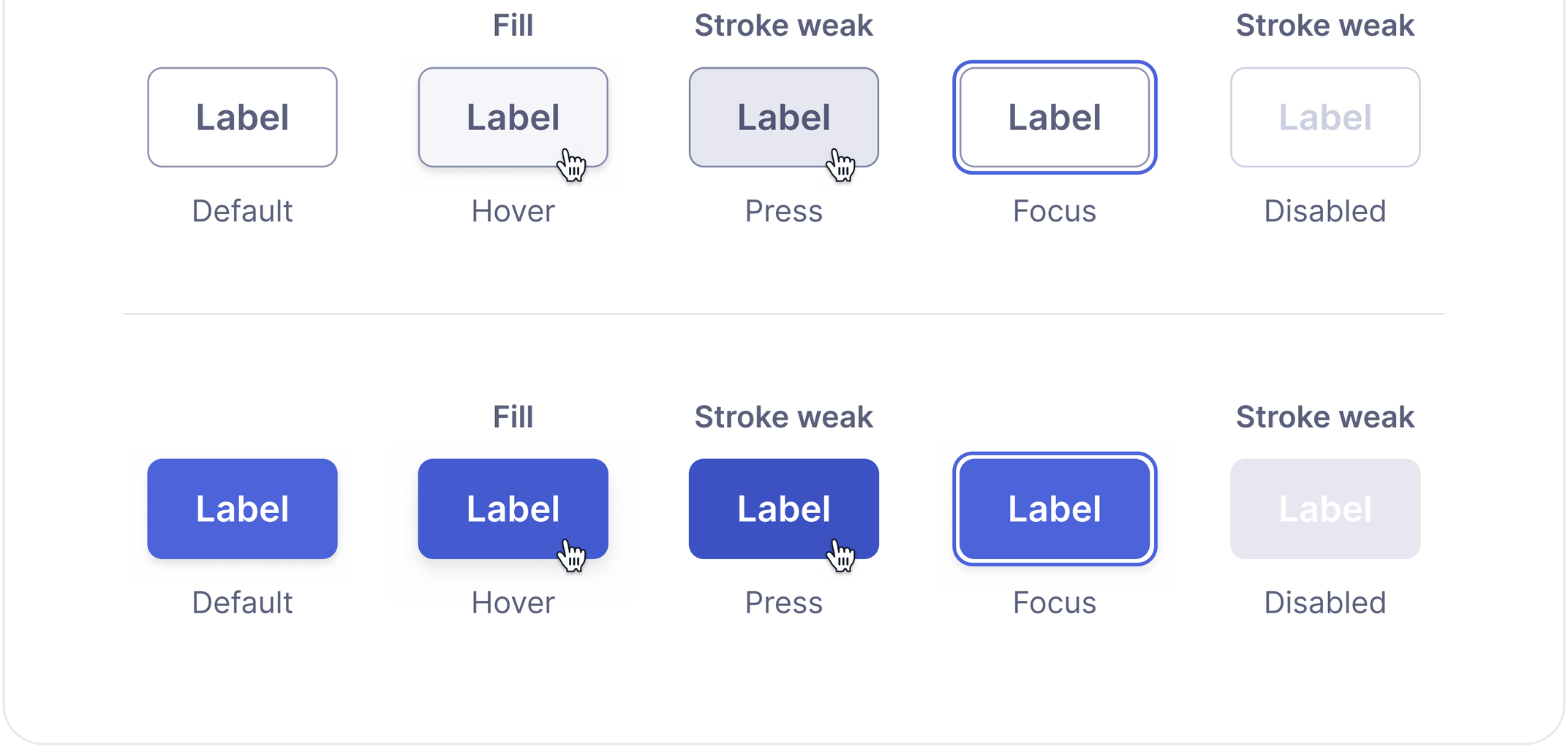
Another great thing about using transparency in your colour palette is that it makes handling hover and press states much neater. Simply layer a transparent overlay on top of interactive elements on hover and press.

- **Hover** - layer an overlay with the “Fill” colour variation from the transparent colour palette.
- **Press** - layer an overlay with the “Stroke weak” colour variation from the transparent colour palette.



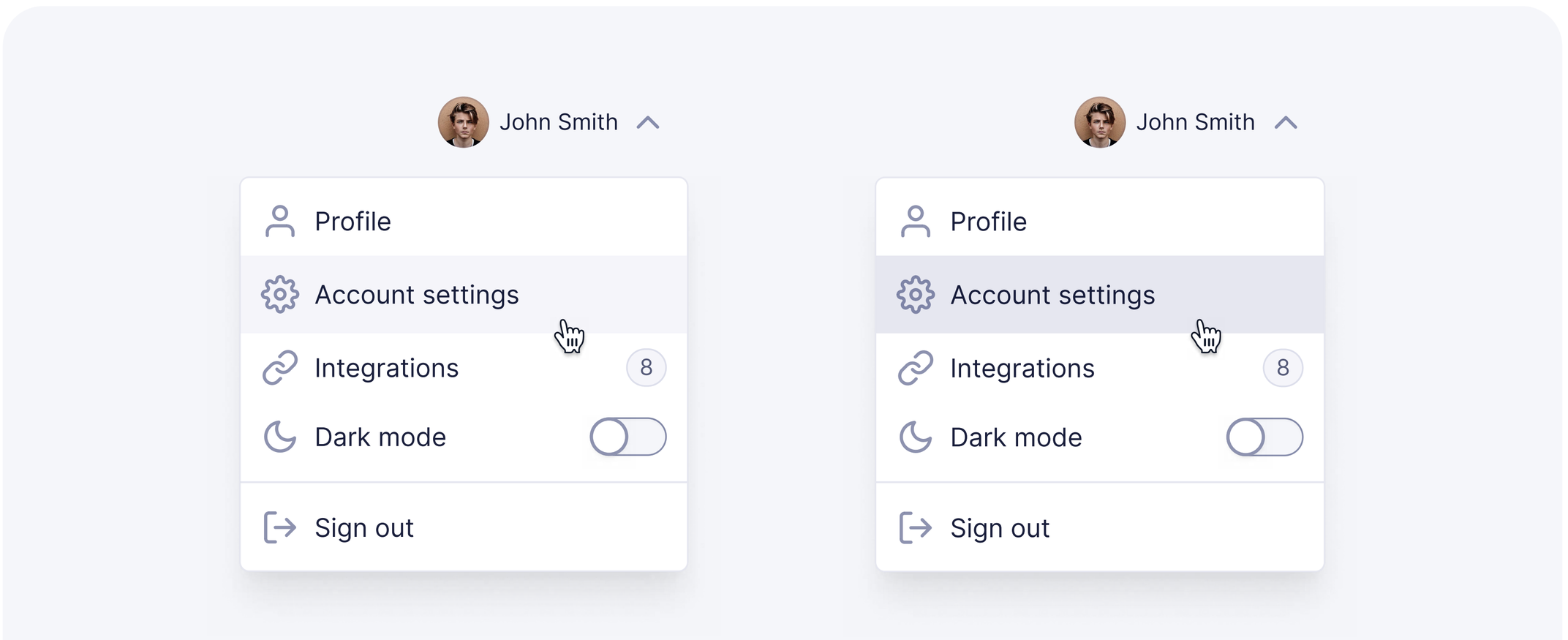
A transparent overlay is layered on top of interactive elements on hover and press

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Transparent overlays applied to buttons

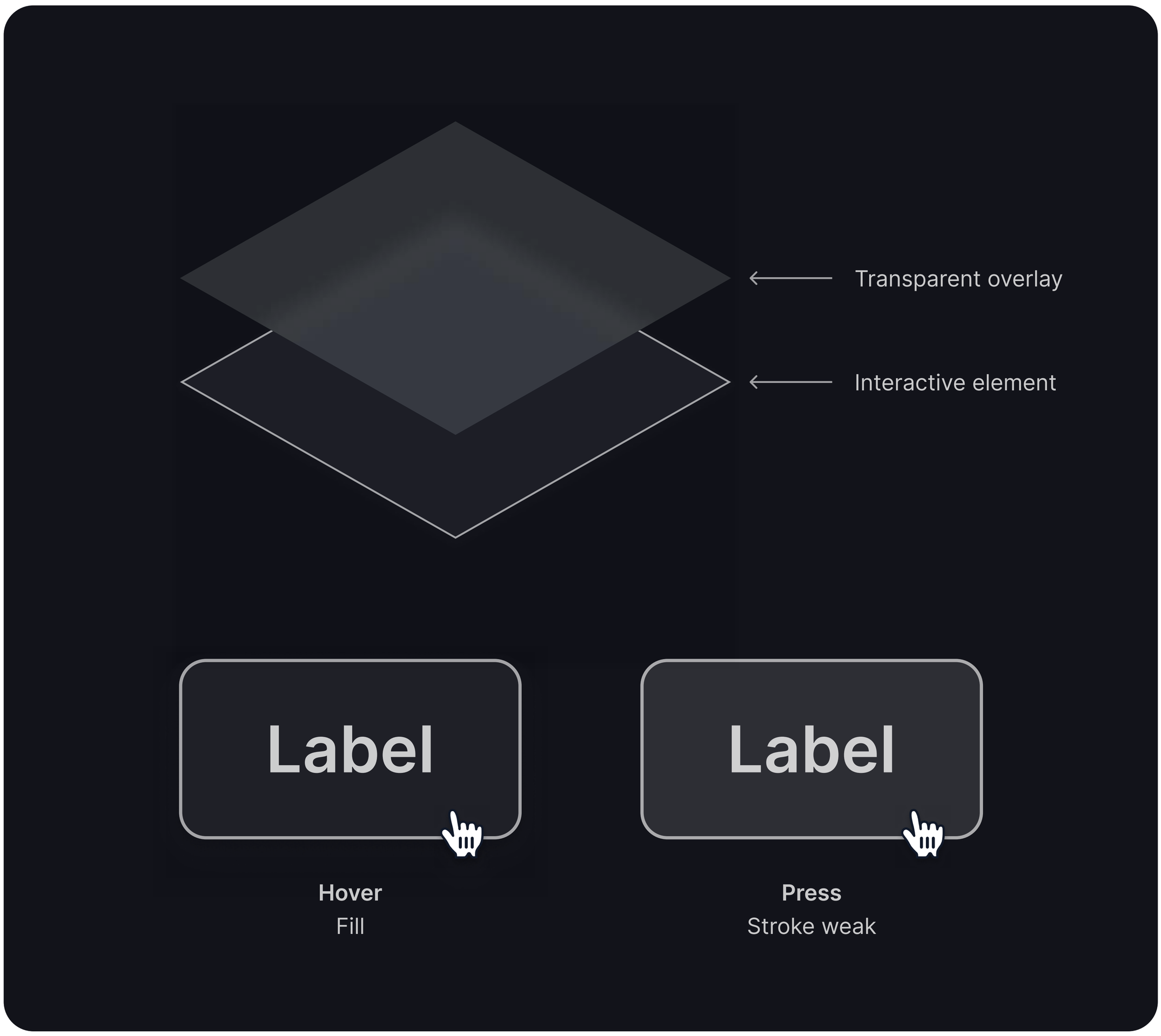
This systematic approach works for all sorts of components, from buttons to dropdown menus, and it doesn’t require the addition of extra colour variations to the colour palette.



Transparent overlays applied to a dropdown menu

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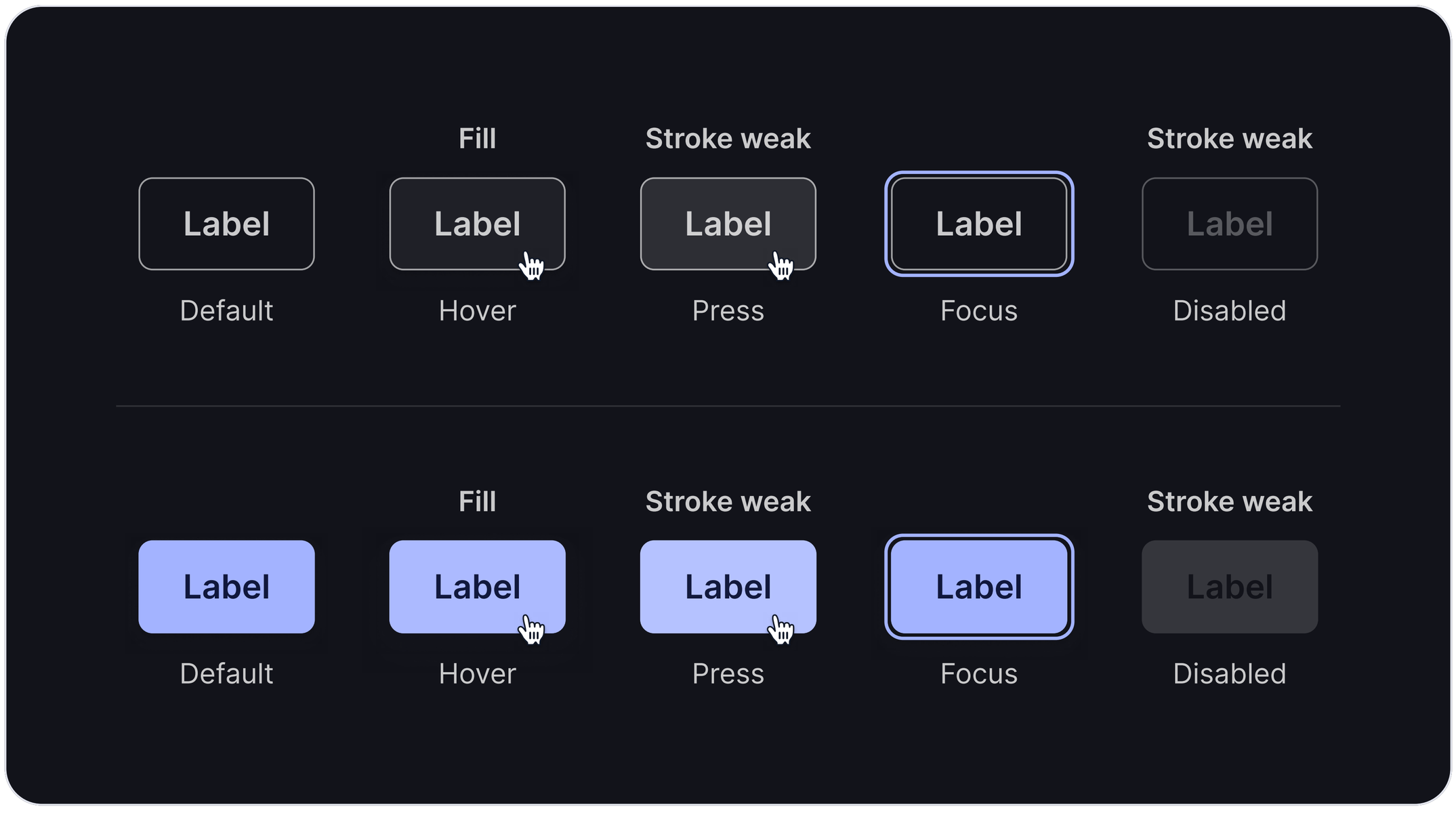
Using transparent state layers works well in dark mode too. Use the “Fill” and “Stroke weak” colour variations for hover and press states respectively.



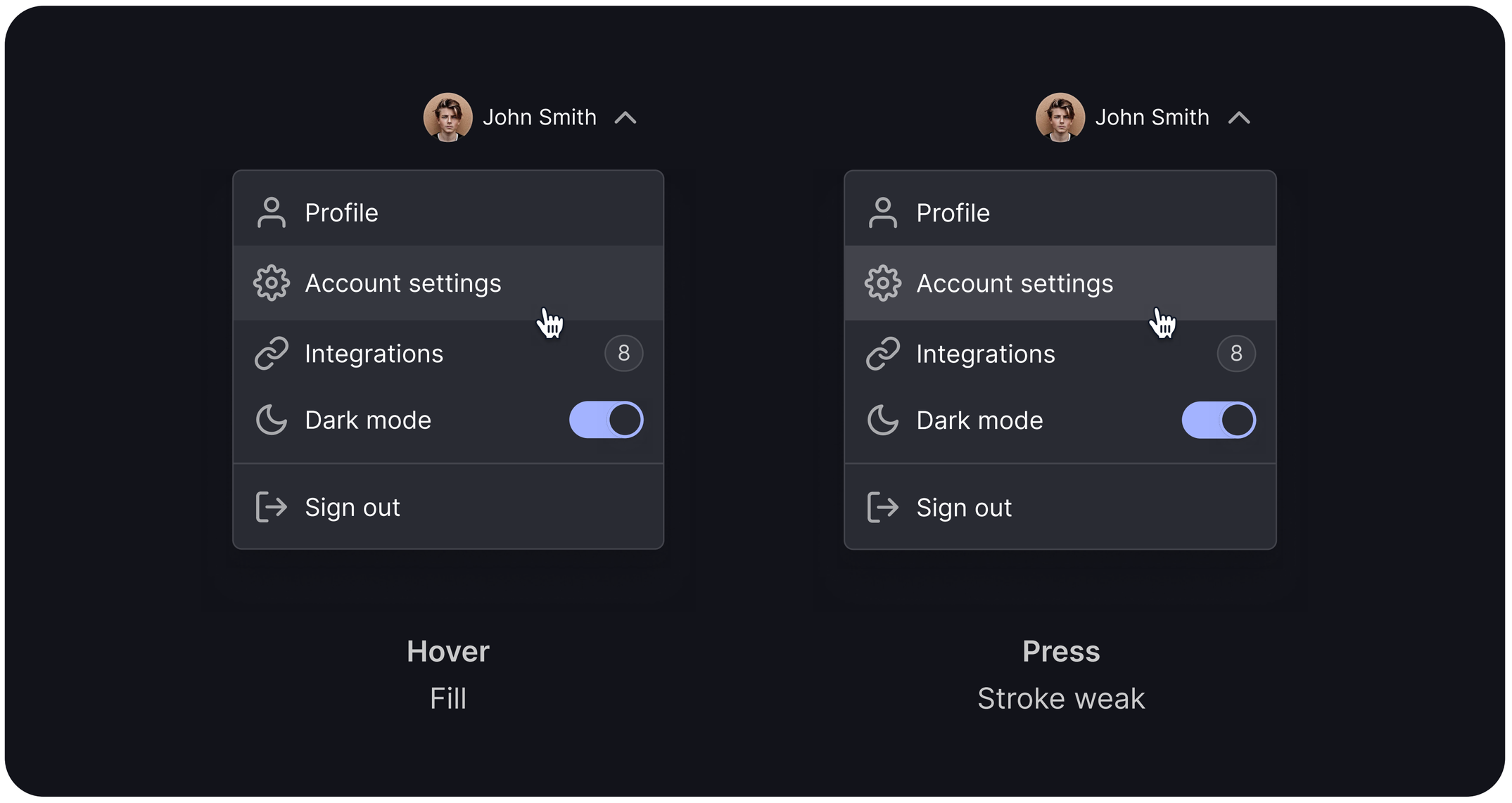
A transparent overlay is layered on top of interactive elements on hover and press

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Here are the same button and dropdown examples with transparent state layers applied in dark mode.



Transparent overlays applied to buttons in dark mode



Transparent overlays applied to a dropdown menu in dark mode

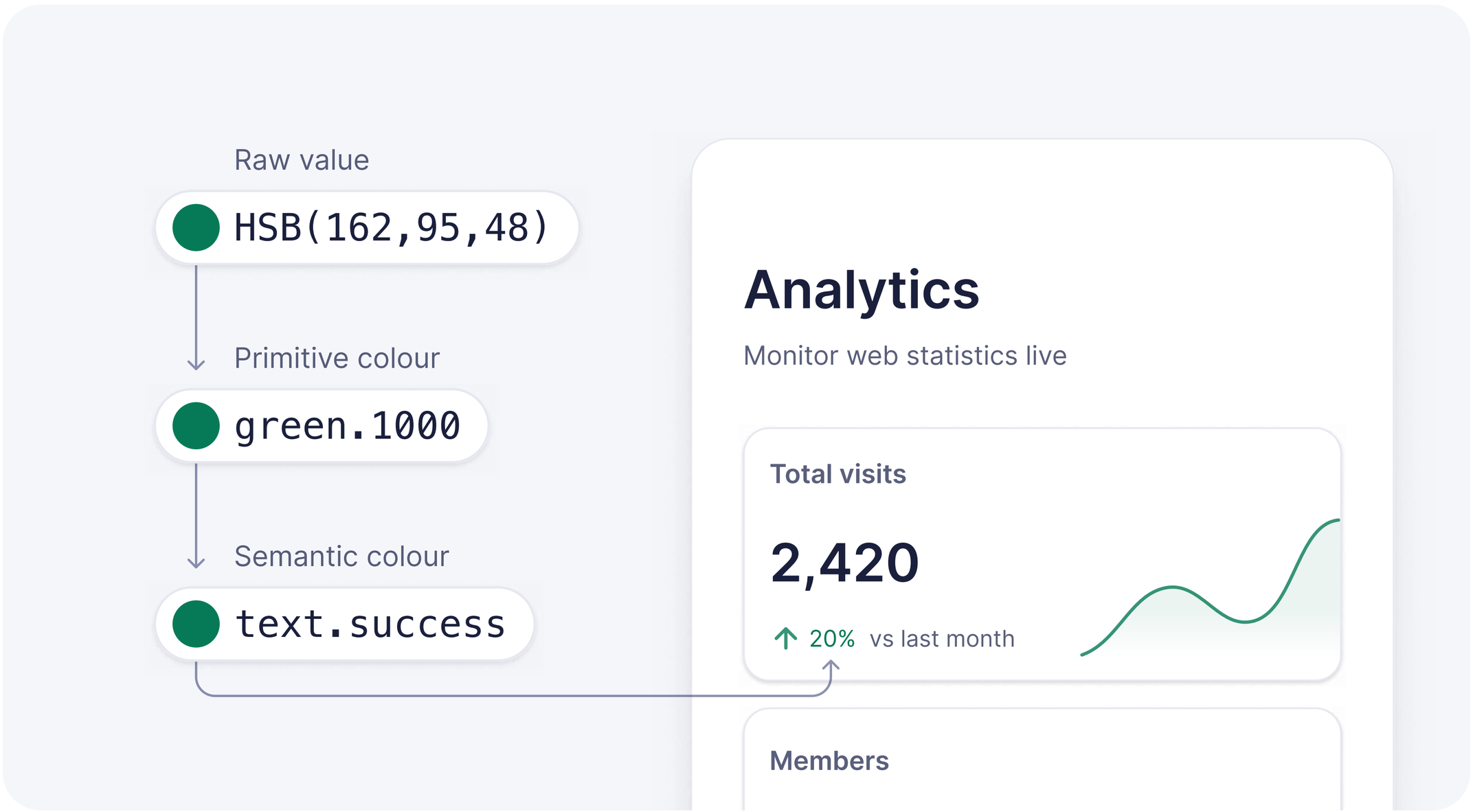
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Name colours to keep them organised

So far, you've created a colour palette with high level rules that govern how colours should be used. This is fine if it's just you working on a simple product, but if there are multiple designers and developers involved, you'll need to name and organise colours systematically. This helps to ensure that colours are applied correctly and consistently.

Colours are commonly named in 2 ways:

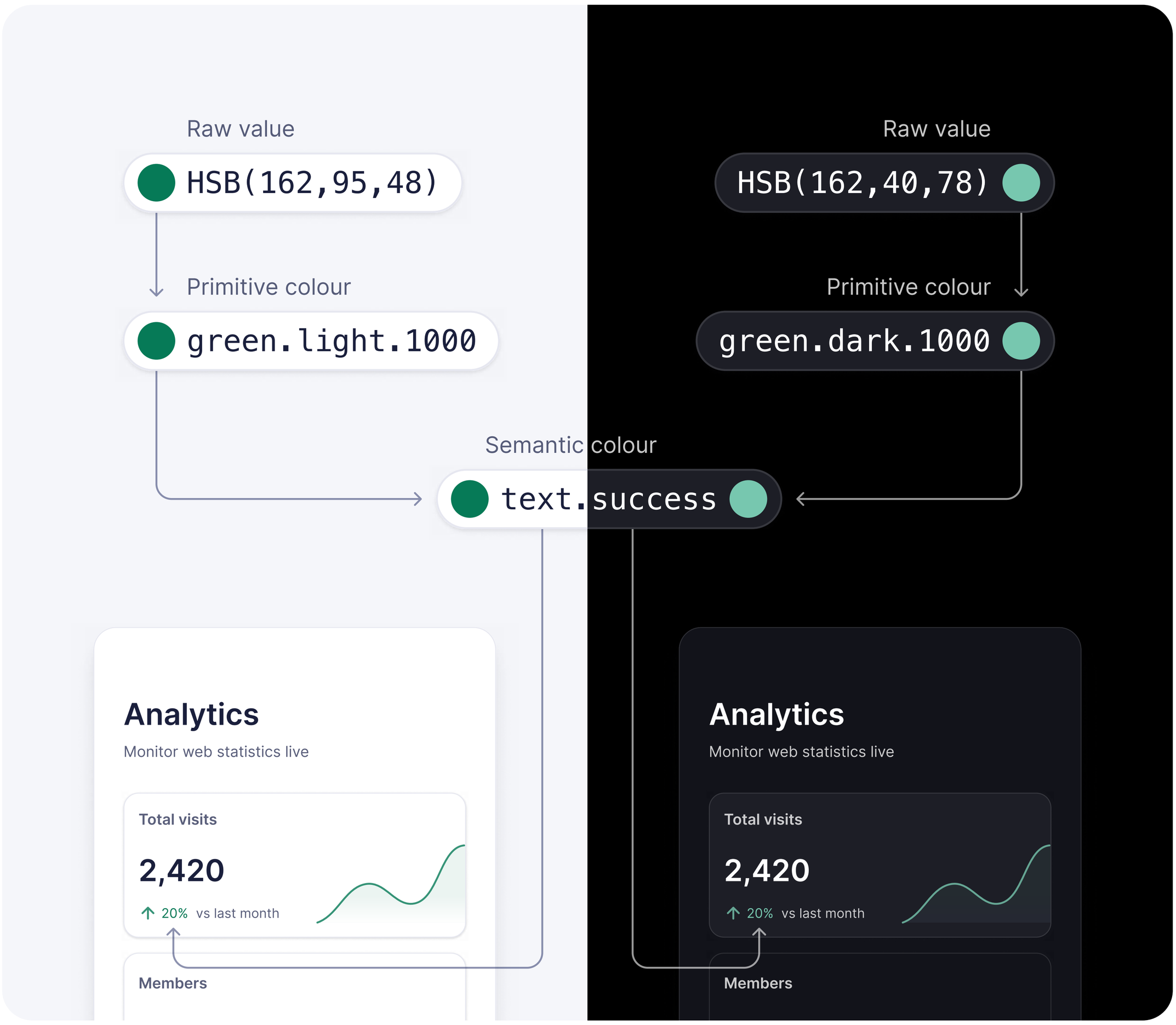
- **Primitive colours** - includes all available colours in the design system. Colours are named based on their appearance and shouldn't be used directly in your designs.
- **Semantic colours** - also known as "colour tokens", refers to a way of naming primitive colours based on how they should be used. A single primitive colour can be used for multiple semantic colours. Use semantic colours directly in your designs.



The relationship between primitive and semantic colours

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Another great thing about creating semantic colours or tokens, is that it makes it easy to switch between light and dark mode. A single semantic colour maps to a different primitive colour in each mode.



A single semantic colour maps to different primitives in light and dark mode

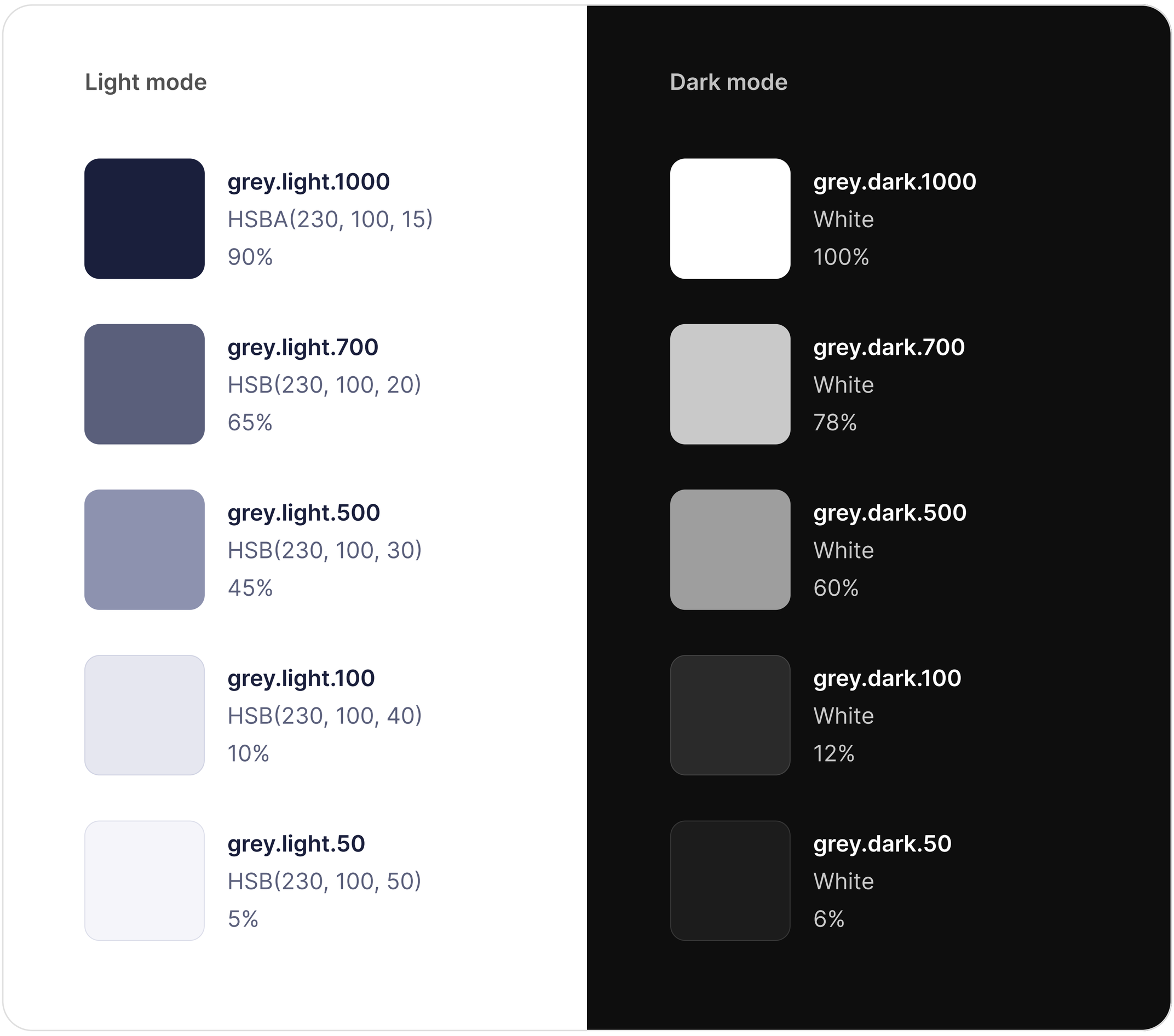
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Naming primitive colours

Name primitive colours based on their appearance. Assign each variation of a colour hue a number from 0 to 1000. This indicates its level of contrast relative to the other variations. 1000 has the highest level of contrast. Primitive colour names should have the following format:

[colour.number]

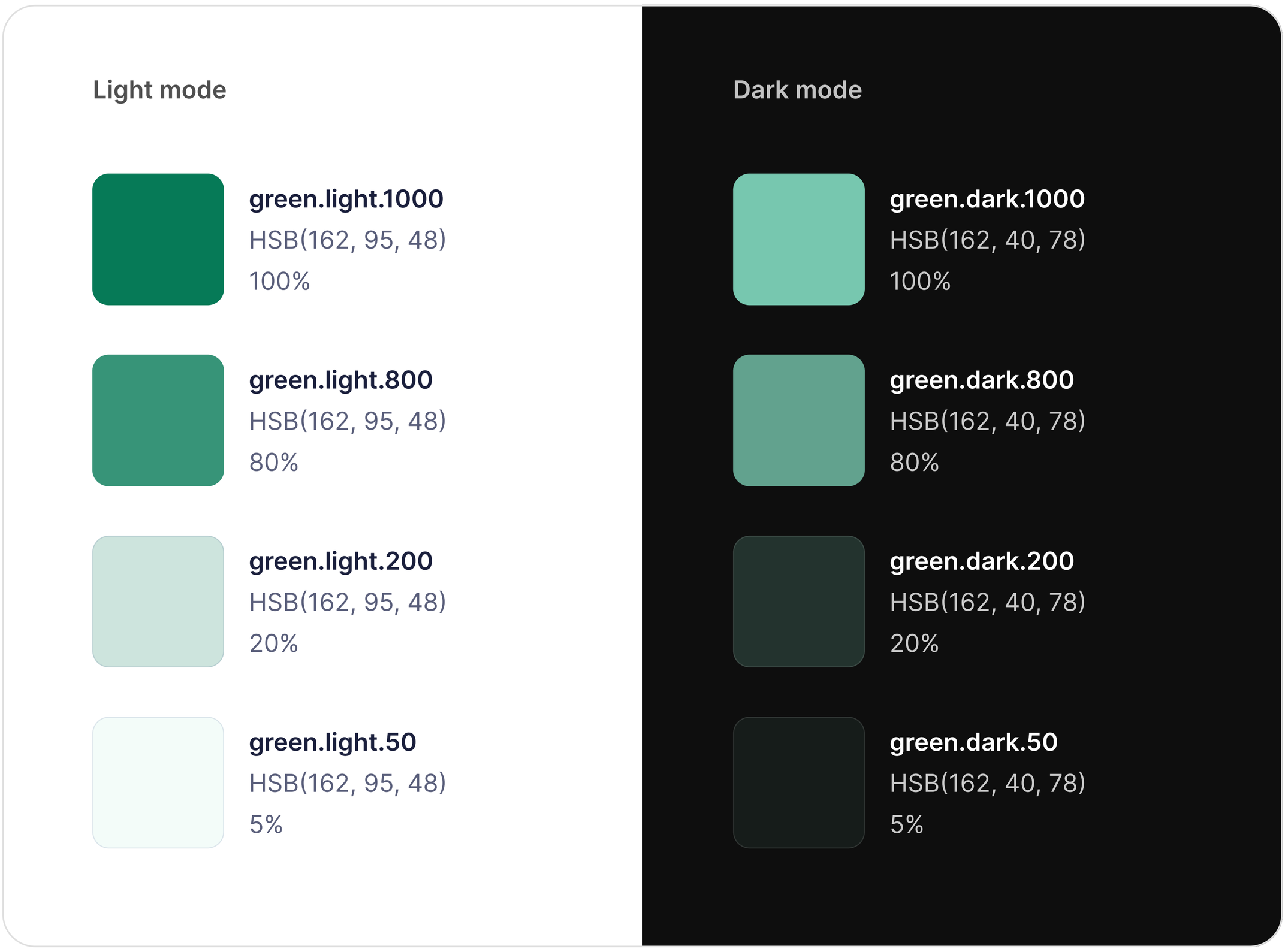
Let’s name the 10 foreground colours in the transparent colour palette you created earlier. Use “light” and “dark” to indicate the mode.



Primitive grey colours in light and dark mode

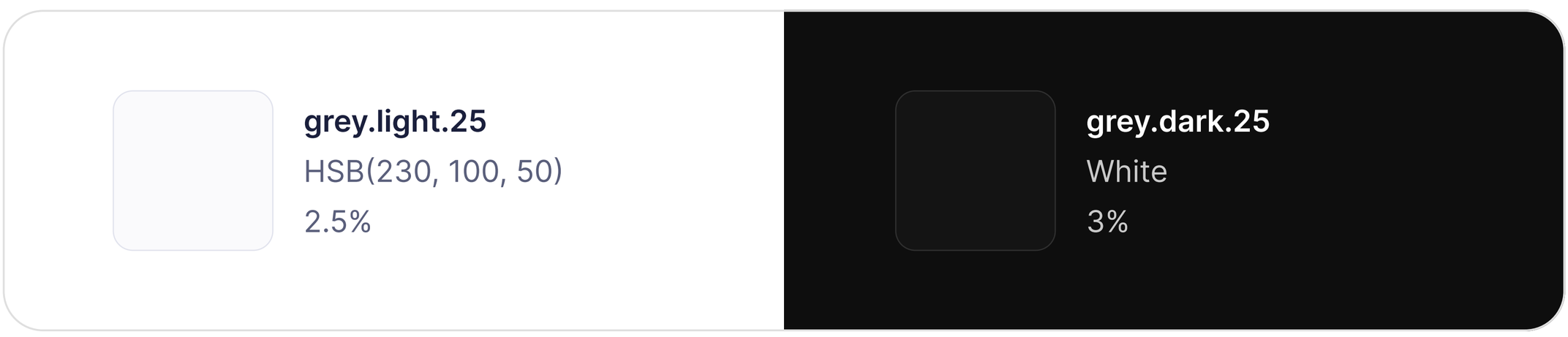
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Name system colours in a similar way. For example, here are the 8 primitive colours for “green”.



Primitive green colours in light and dark mode

You can add more colour variations as you need them. For example, you may need an even lighter variation of grey to use on some backgrounds. Assuming the new variation of grey is around half the contrast of “grey.50”, you’d name it “grey.25”.



Adding another grey colour variation

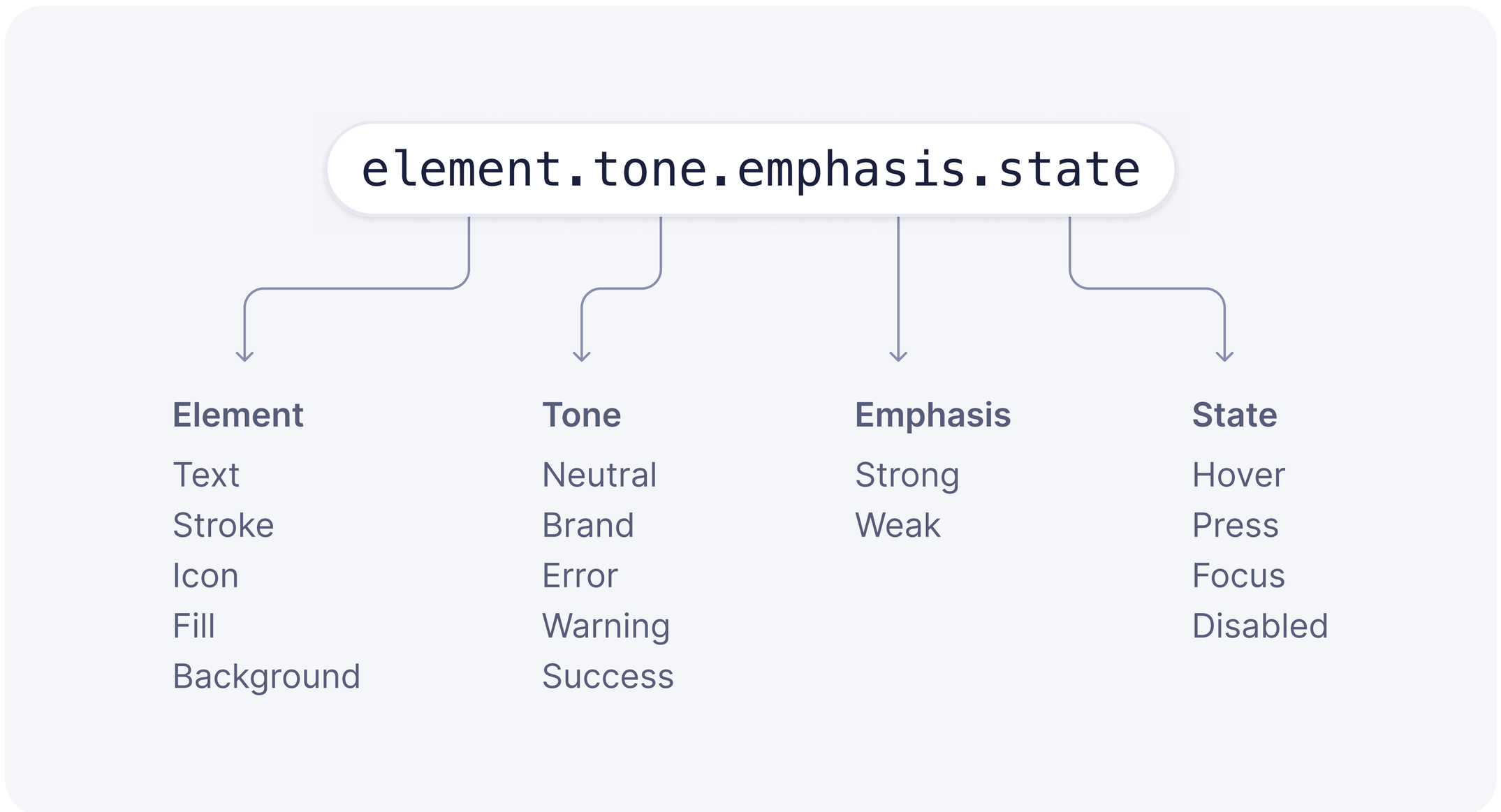
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Naming semantic colours

You can name semantic colours in many different ways. The following naming structure is simple but powerful. It’s easy to learn and flexible enough to grow for larger and more complex design systems.

The name of each colour consists of up to 4 words that describe how and where to use the colour on an interface:

[element.tone.emphasis.state]

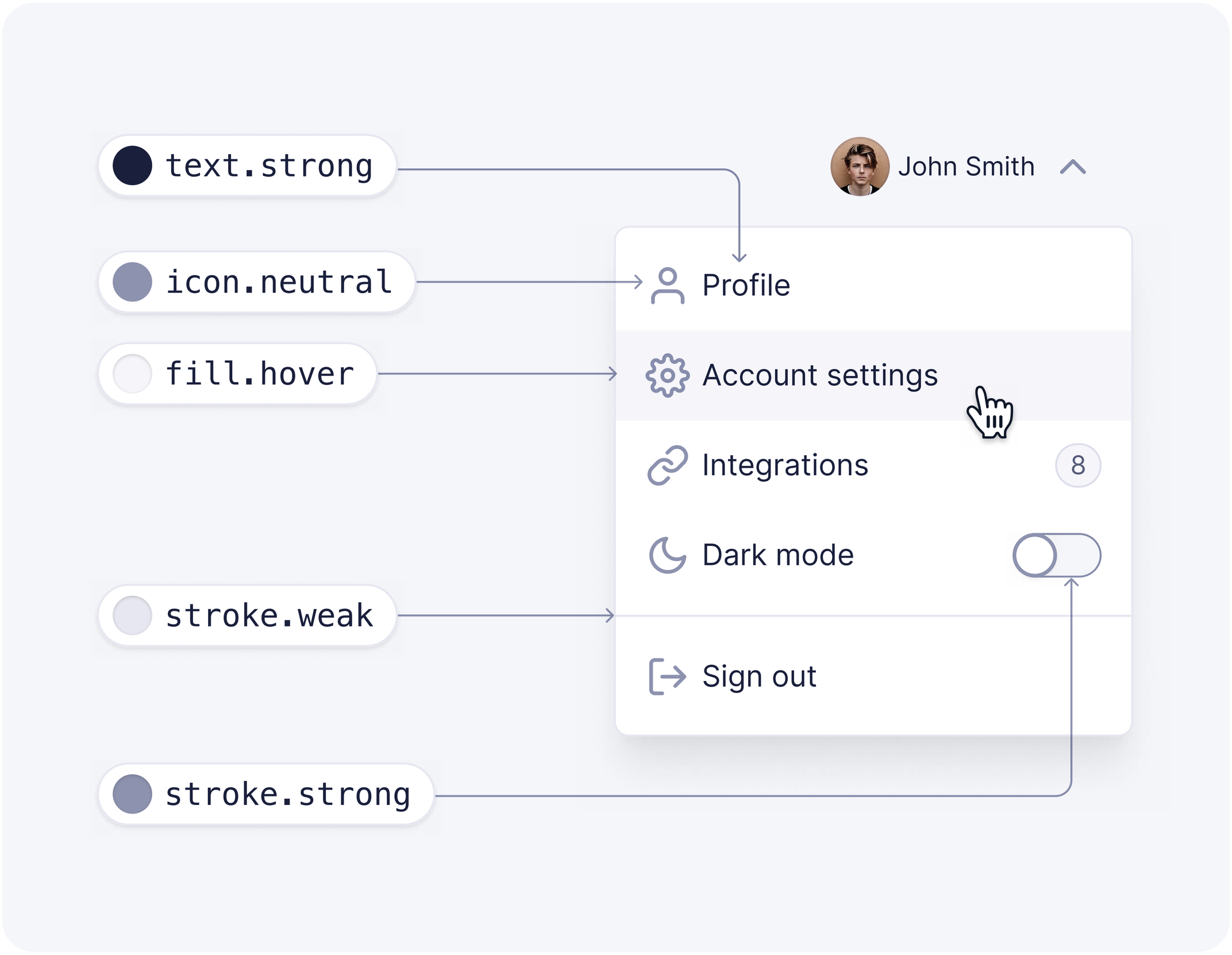


Naming structure for semantic colours

Here are some examples:

- **text.error** - used for error messages on forms.
- **stroke.strong** - used for form input field borders.
- **fill.success.weak** - used for the background of success alert messages.

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Examples of semantic colours used on a dropdown menu

You don’t need to use a full stop (.) to separate each word. Some prefer to use a hyphen (-). In Figma (a popular design tool), words are separated using a forward slash (/). What’s important is that there is a consistent naming structure with up to 4 words to describe how to use each colour.

You can take naming a step further and create colour names for specific components, but it’s often unnecessary and overcomplicated.

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Adjust photo colour temperature to match the colour palette

Rather than a guideline, this is a quick trick that can help you create a harmonious look and feel. You may have noticed that some photos look warmer or more orange and others look cooler or more blue. This is due to their colour temperature, which is a measure of the colour of light.

If your colour palette is based on a cool colour like blue, using photos with a cooler colour temperature can help create a more cohesive look and feel. The opposite applies to warm colour palettes. You can use a photo editing tool to adjust the colour temperature of photos.

The middle photo below is the original. The colour temperature of the left photo was decreased, while the one on the right was increased.

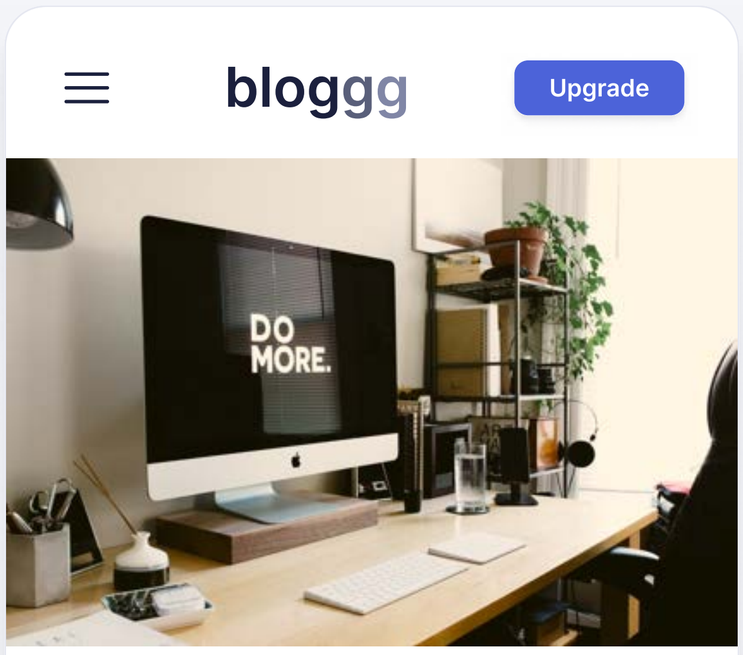


This little trick isn’t for product photos where realistic colours are important. It can, however, come in handy for decorative photos where you want to create a harmonious feel.

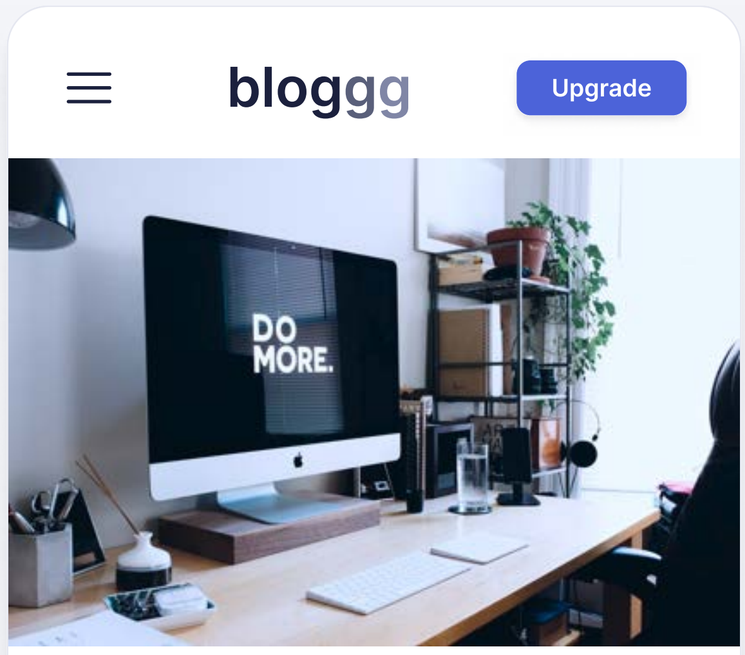
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The following example demonstrates how a warm photo can conflict with a cool colour palette. There’s nothing wrong with this, but a cool or neutral photo fits the cool blue colour scheme more closely.

Warm photo



Cool photo





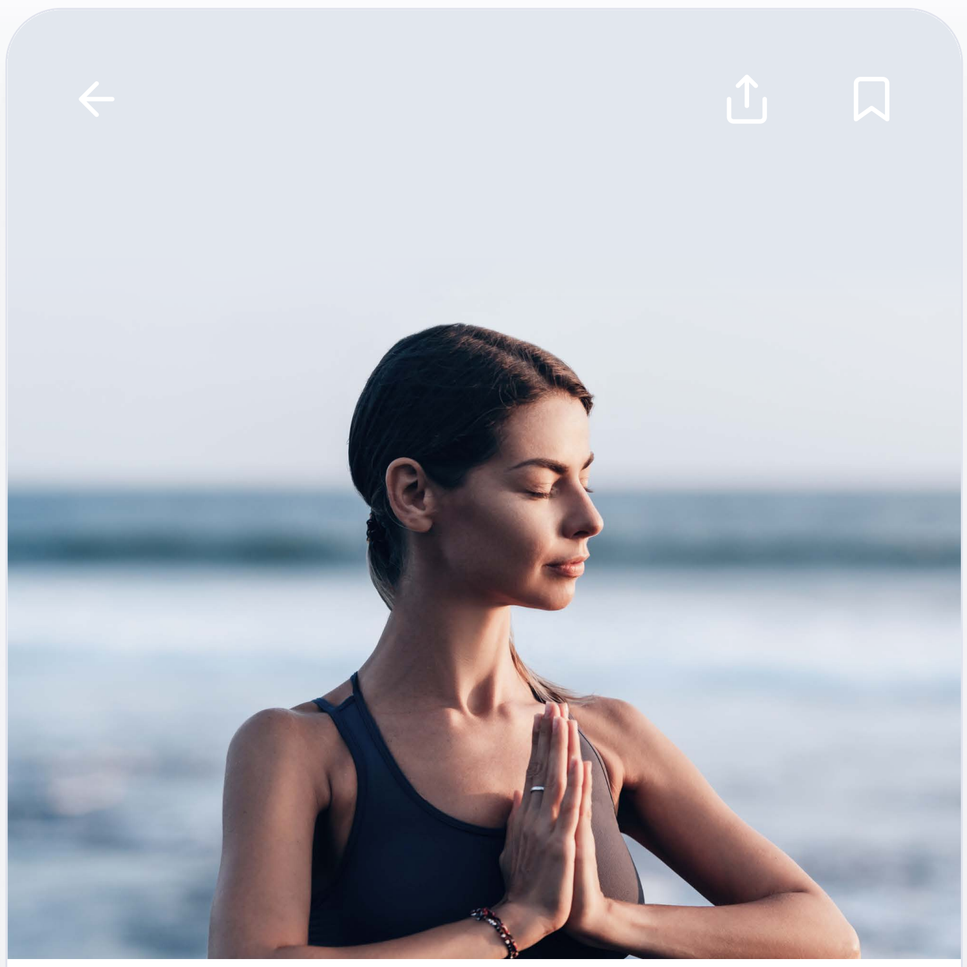
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TUTORIAL - COLOUR

Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off

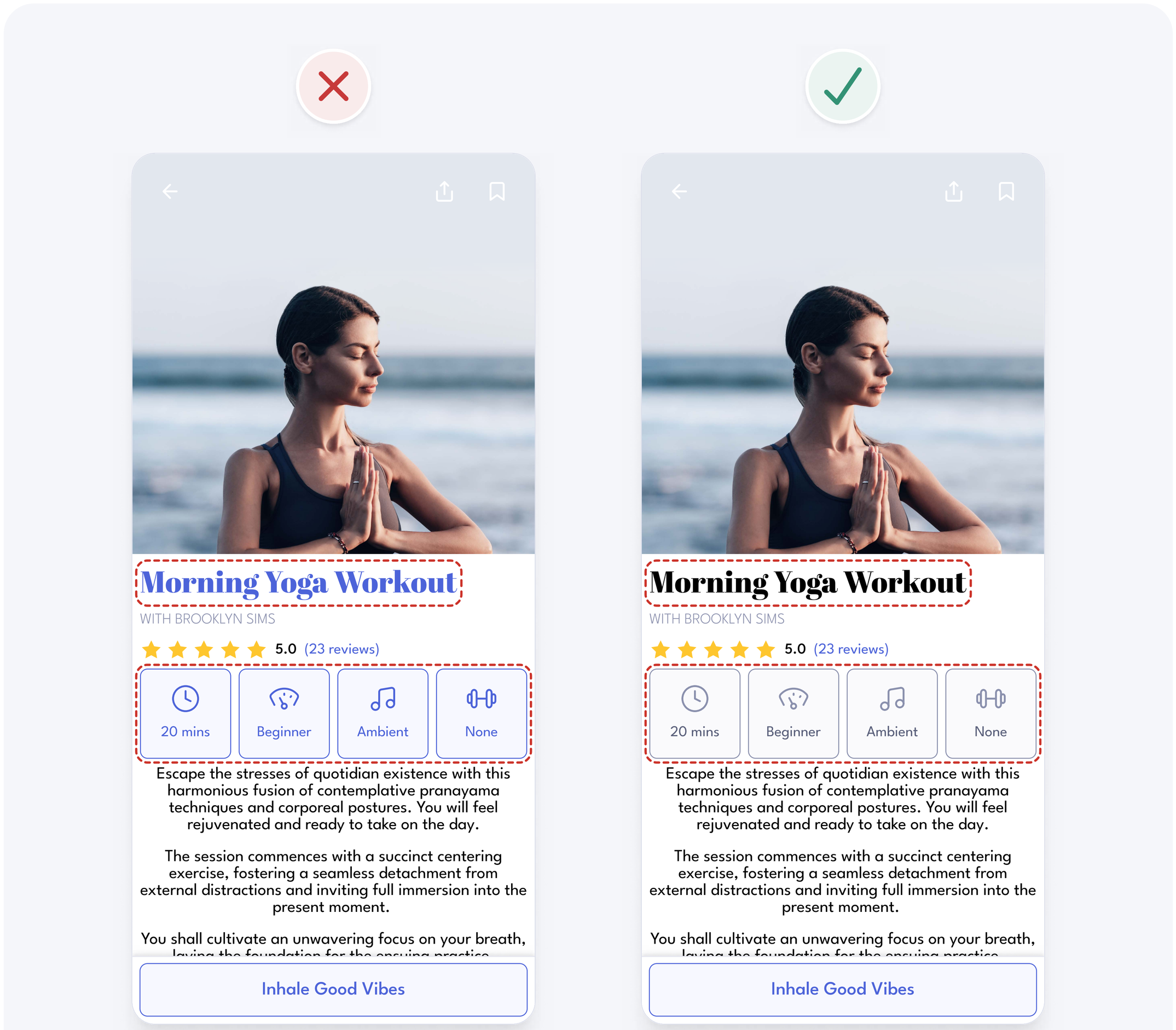


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Apply the brand colour to interactive elements

In the fitness app example, colour isn’t used purposefully. Interactive elements like the button and text link use the brand colour, but so do non-interactive elements like the heading and icons. This makes it unclear what’s interactive and what’s not. A simple and effective approach is to apply the brand colour to interactive elements like text links and buttons.

To help avoid confusion, remove the brand colour from the heading and icons, as they’re not interactive.

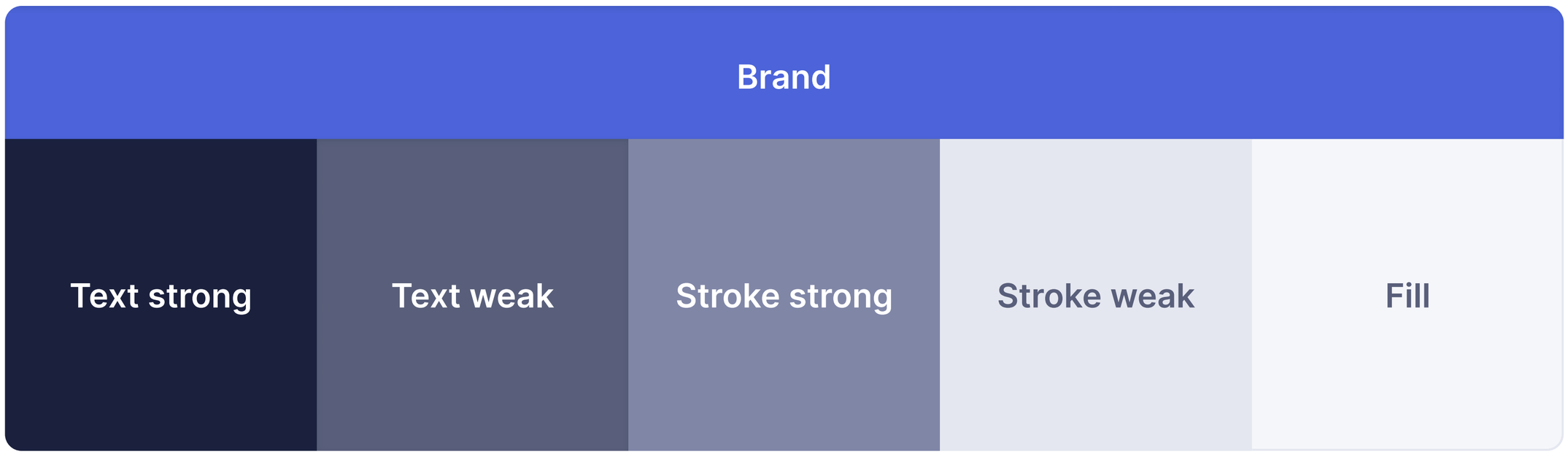


The brand colour is removed from non-interactive elements

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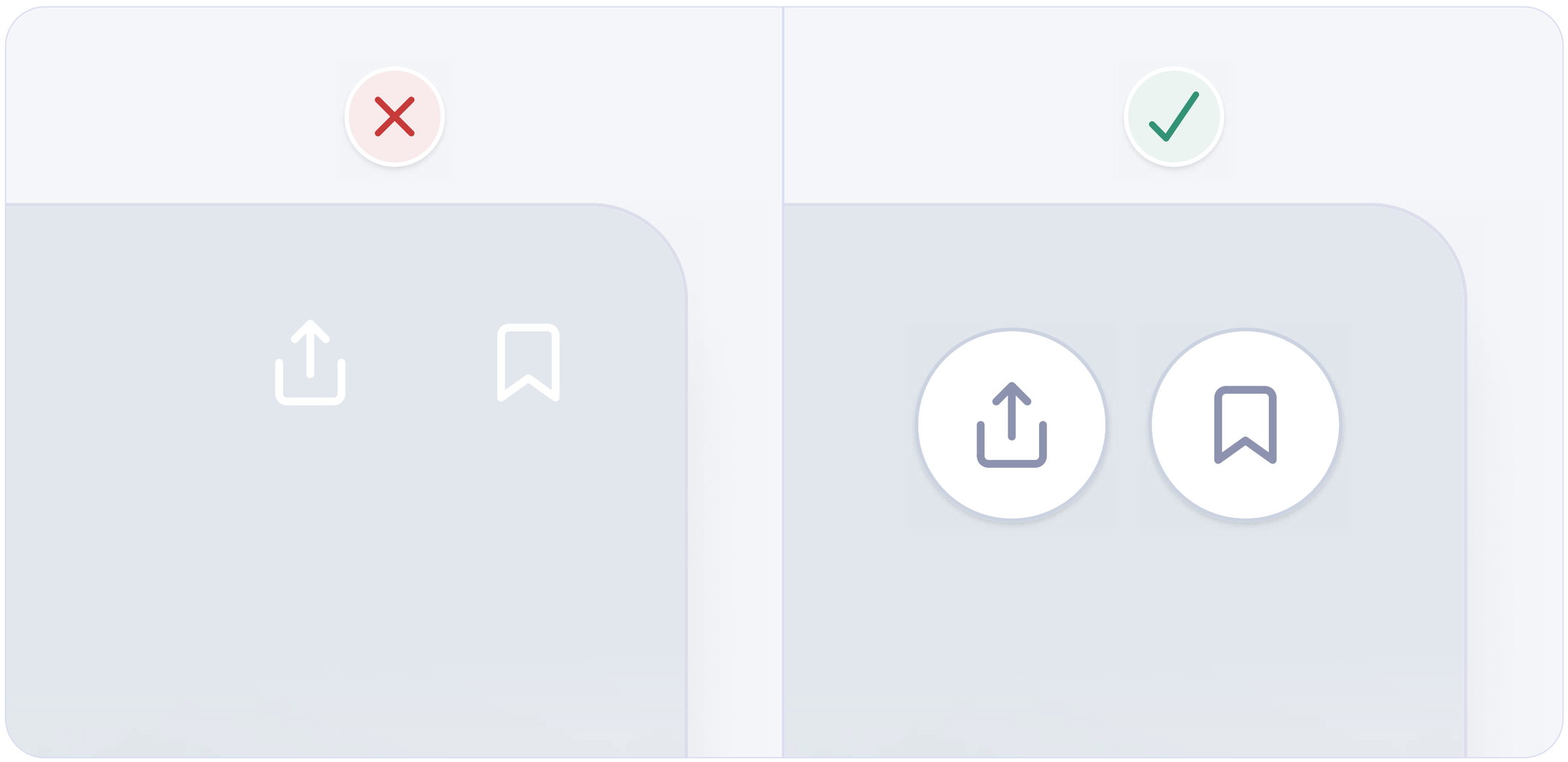
Apply the colour palette rules

Many of the problems with colour usage in the example fitness app can be fixed by simply applying the colour palette rules. This will help to avoid common contrast and accessibility issues, as we'll see next.



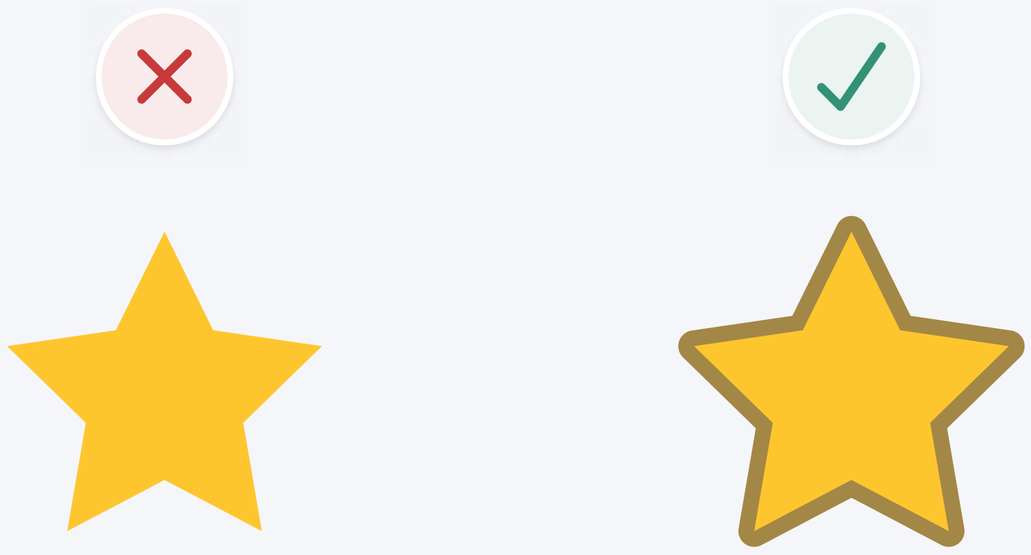
Ensure interface elements have a 3:1 contrast ratio

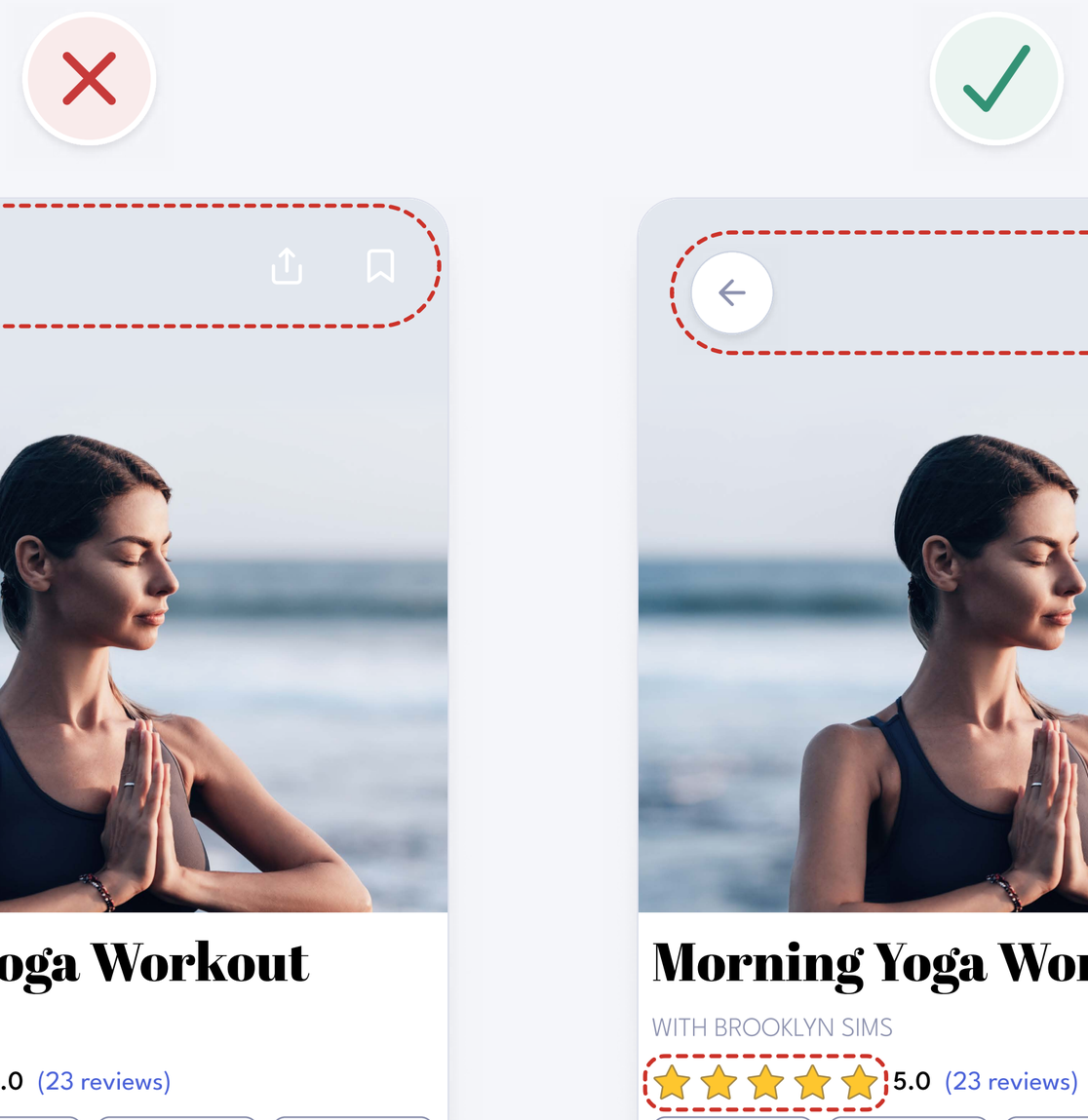
In the fitness app example, the contrast of the icons sitting on the photo is too low. Using the "Stroke strong" colour from the palette and adding a solid white background to the icons gives them sufficient 3:1 contrast, regardless of the photo they sit on. This also reduces the interaction cost, as the tap area of the icons is now larger and clearly visible.



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The contrast of the star ratings in the example are also less than 3:1. Adding a darker border gives them sufficient contrast.



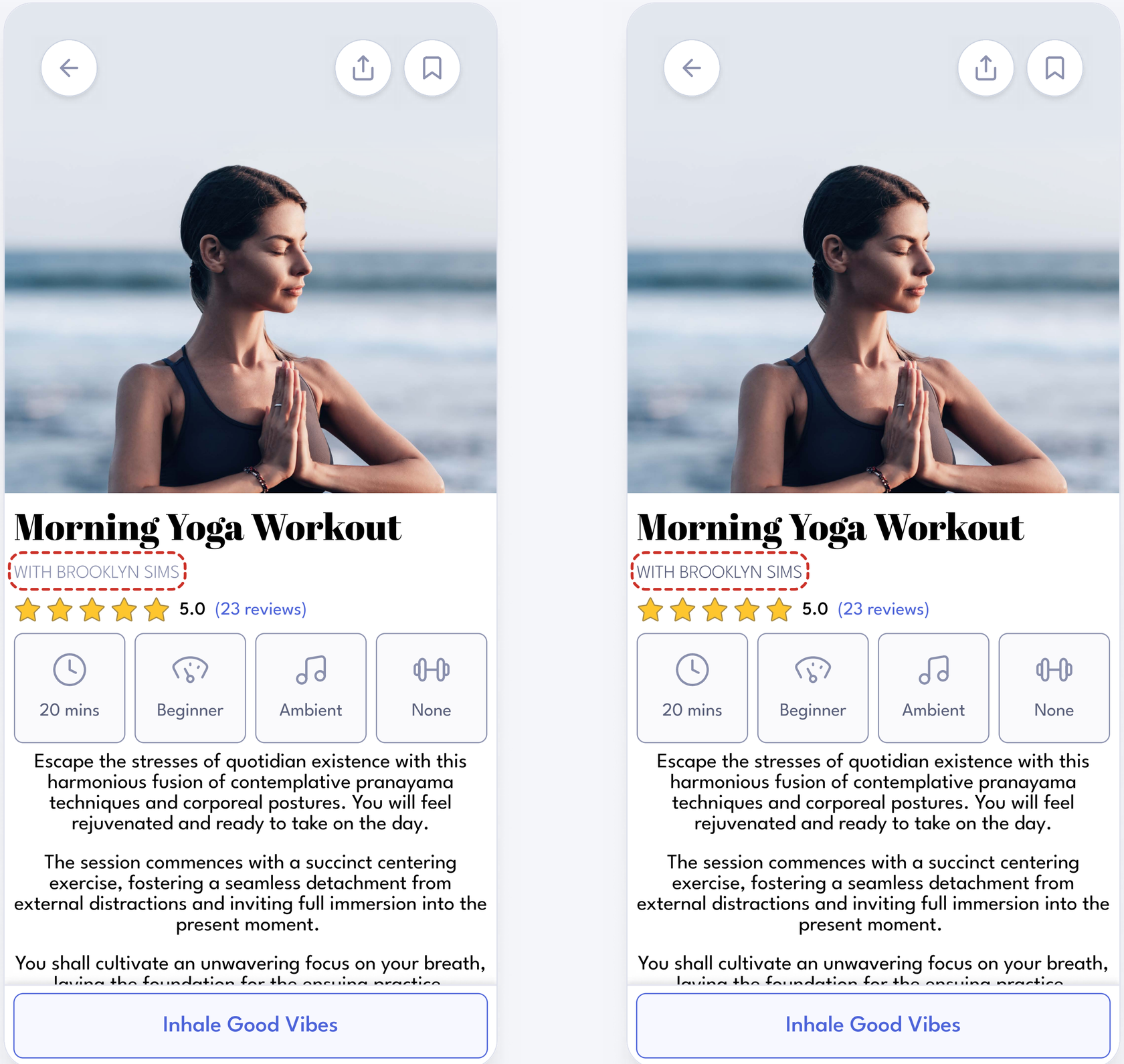


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Ensure text has a 4.5:1 contrast ratio

In the fitness app example, the contrast of the trainer's name is too low. The thin font weight makes it even harder to read. Using the "Text weak" colour from the palette helps make the text more legible.



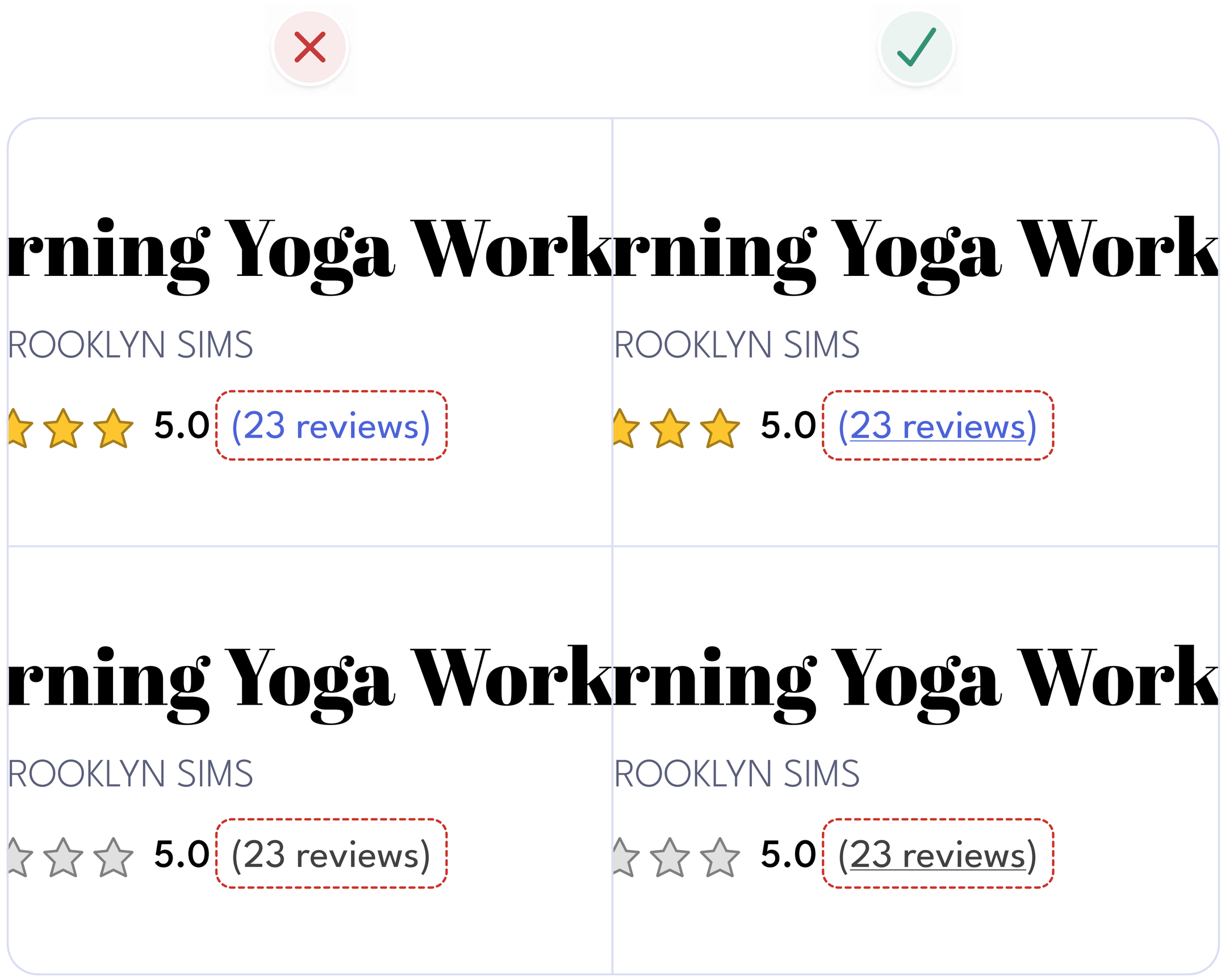


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Don’t rely on colour alone as an indicator

In the fitness app example, the brand colour is used on the “reviews” text to indicate that it’s a link. If colour is removed, the link text looks the same as other text, so people who are colour blind won’t be able to tell it’s a link.

Underlining the link text clearly differentiates it from other text in the absence of colour.

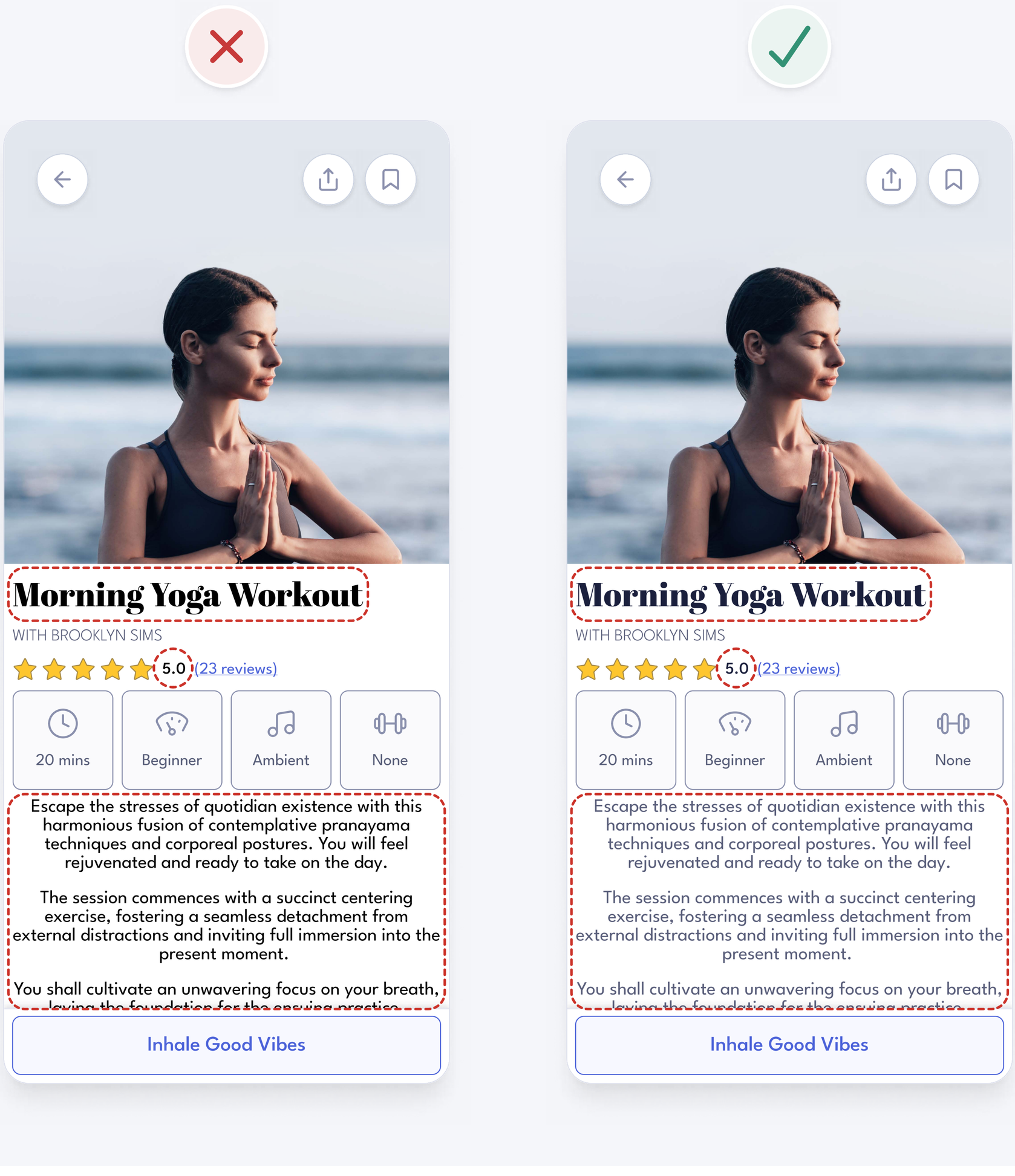


Link is underlined to clearly differentiate it from plain text

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Avoid pure black

In the fitness app example, pure black is used for multiple text elements. Using dark grey instead helps to improve readability.



Dark grey is used instead of pure black to help improve readability

Awesome work. The example app is starting to make more sense. Using colour purposefully and ensuring sufficient contrast is quick and easy, but it can make a big difference. We'll continue improving the example fitness app at the end of each chapter.

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Chapter summary

- Ensure text and interface elements have sufficient contrast and don’t rely on colour alone to convey meaning or distinguish visual elements.
- Design in black and white to create the foundations for spacing, size, layout, and contrast, then add colour purposefully if needed. For example, use the brand colour to indicate interactive elements.
- Create a small set of predefined colours called a colour palette. Define rules that govern how colours are used. This helps improve consistency and speeds up the design process.
- Consider using transparent colours in addition to solid ones. This helps ensure foreground elements have similar prominence when on different coloured backgrounds.
- Name colours systematically based on how they should be used. This keeps them organised and helps ensure they’re applied consistently.

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Your progress

3 of 8 chapters completed

- Fundamentals
- Less is more
- **Colour**
- 4 Layout and spacing
- 5 Typography
- 6 Copywriting
- 7 Buttons
- 8 Forms

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CHAPTER 4

Layout and spacing

Create a consistent spacing system and learn about alignment and layout

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Group related elements

Breaking up information into smaller groups of related elements helps to structure and organise an interface. This makes it faster and easier for people to understand and remember.

Group related elements using the following methods:

1. Place related elements in the same container
2. Space related elements close together
3. Make related elements look similar
4. Align related elements in a continuous line

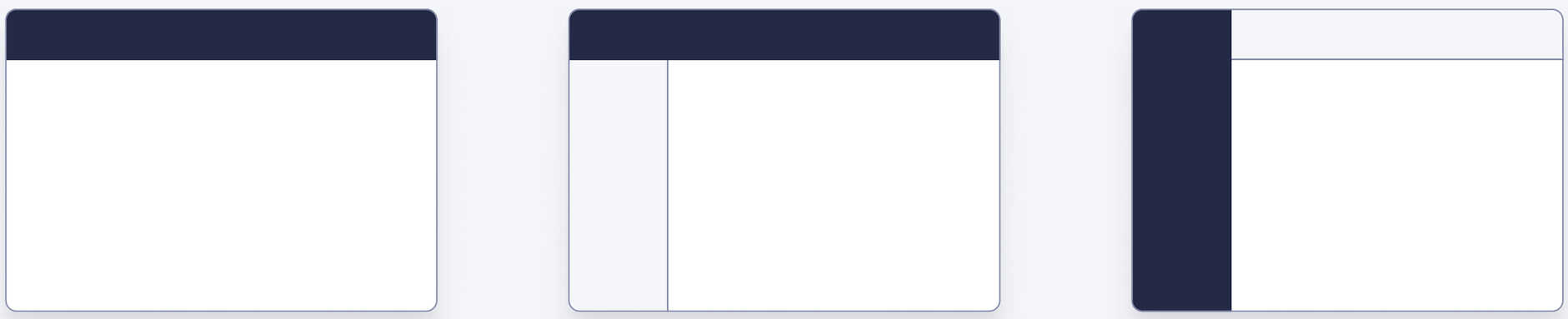
You can combine these methods to help display groupings more clearly. Let’s look at each of these grouping methods in more detail.

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1. Place related elements in the same container

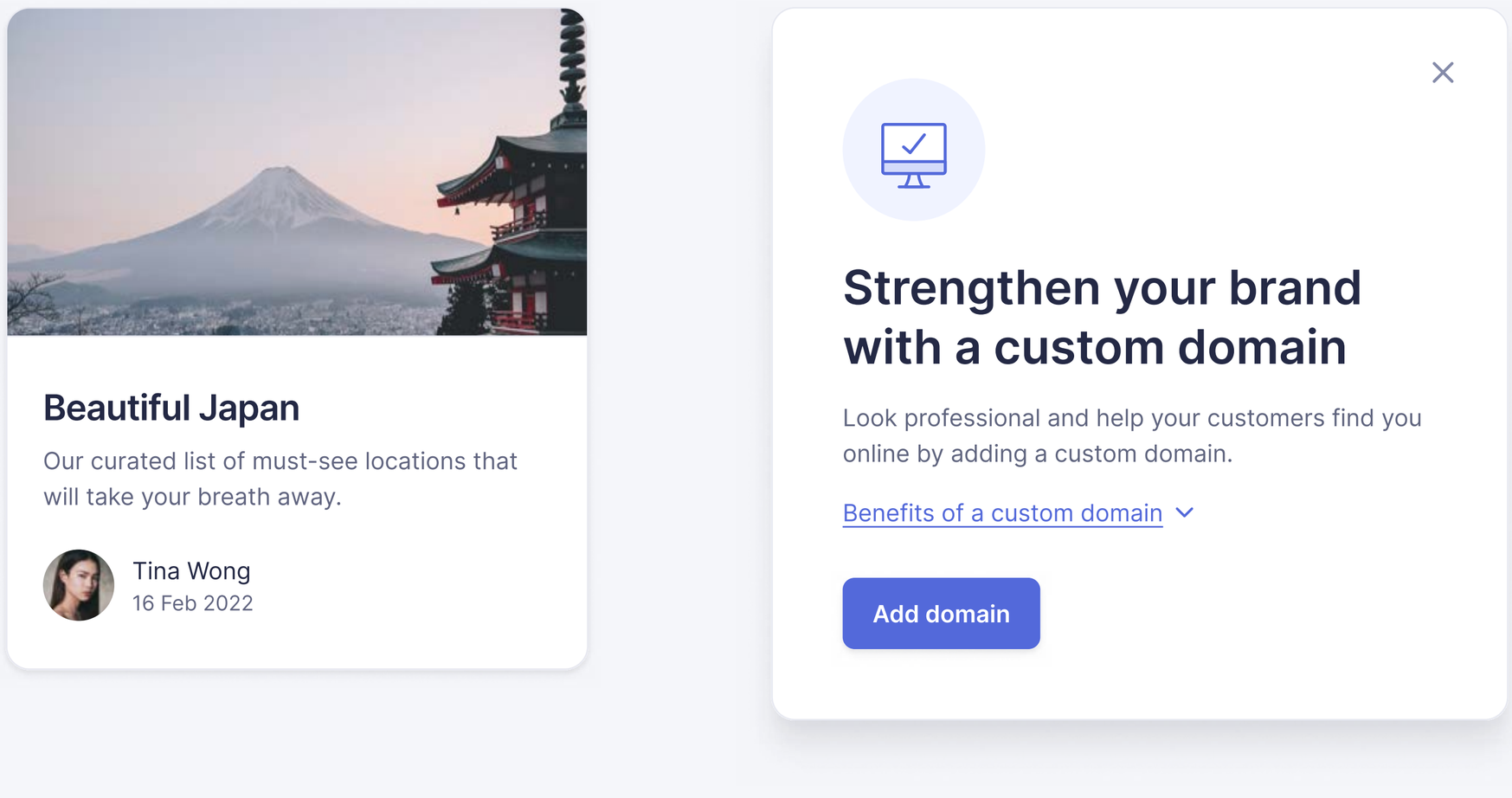
According to the principle of common region, items within the same boundary or container are perceived as a group and assumed to be related. You can create containers using borders, shadows, and background colours. Using containers is the strongest visual cue to group interface elements.

Containers are often used to create the main structure of an interface.



Examples of containers being used to define common website structures

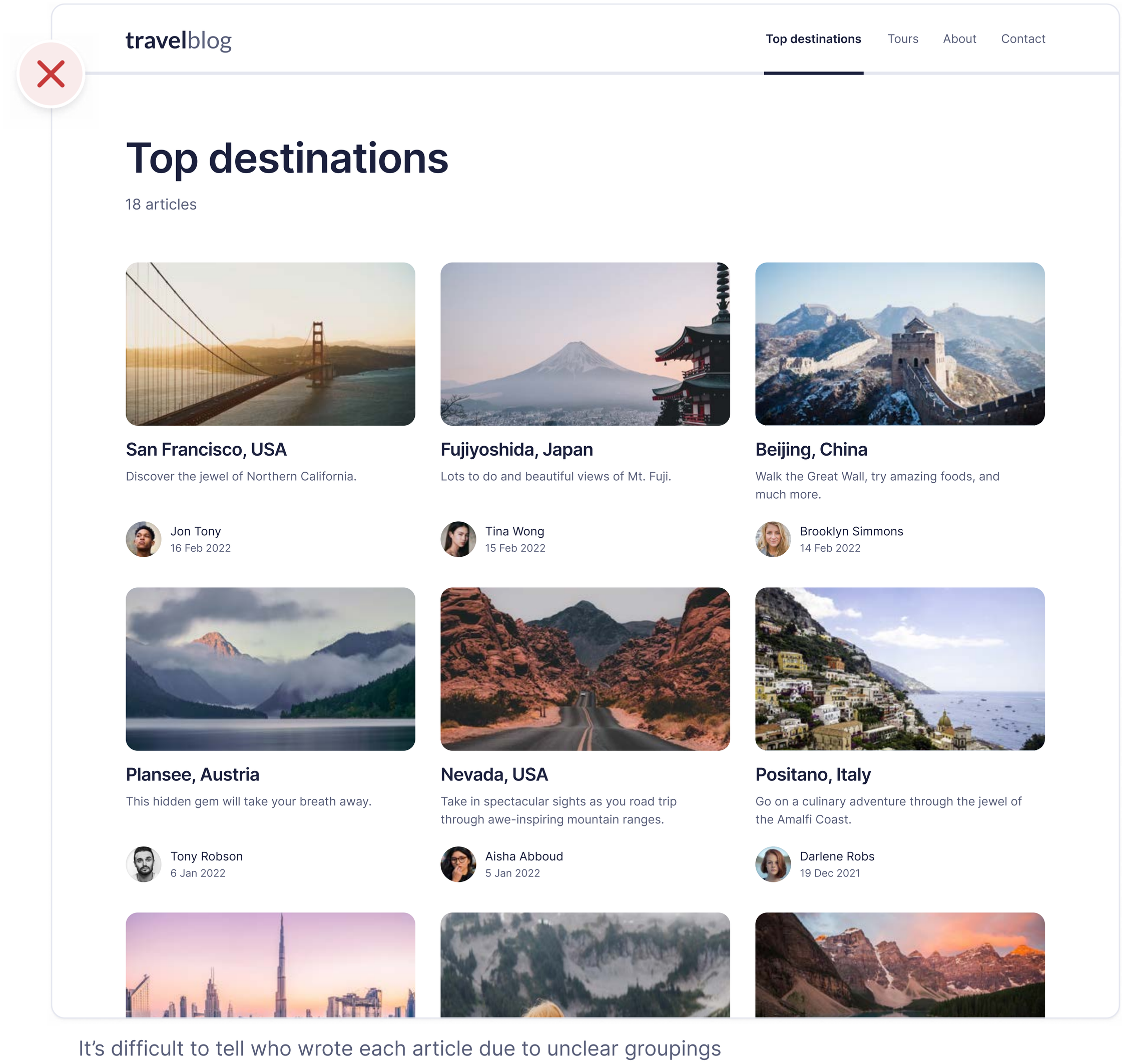
Cards and dialog boxes are a common type of container used to group smaller pieces of related content.



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If groupings are unclear, consider using containers to help make them clearer. In the following travel blog example, it's difficult to tell who wrote each article, as the author's details are very close to the article below.

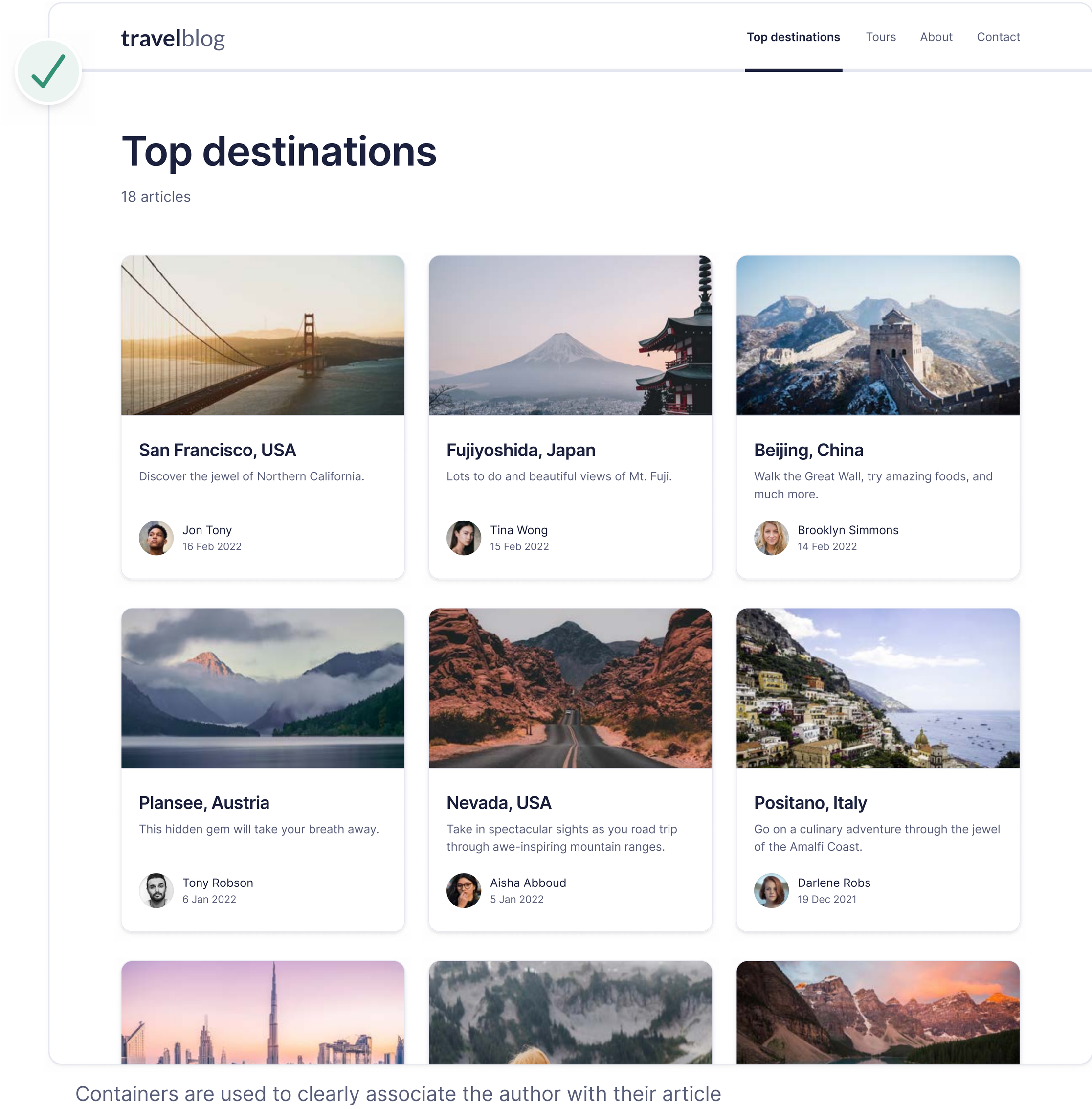
There are also varying amounts of space above the author's details, as the article description text is an inconsistent length. A large gap above the author's details makes it look like the author is related to the article below.



It's difficult to tell who wrote each article due to unclear groupings

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Using containers helps to clearly associate the author with their article. This example demonstrates how containers can overpower spacing as a grouping method.



Containers are used to clearly associate the author with their article

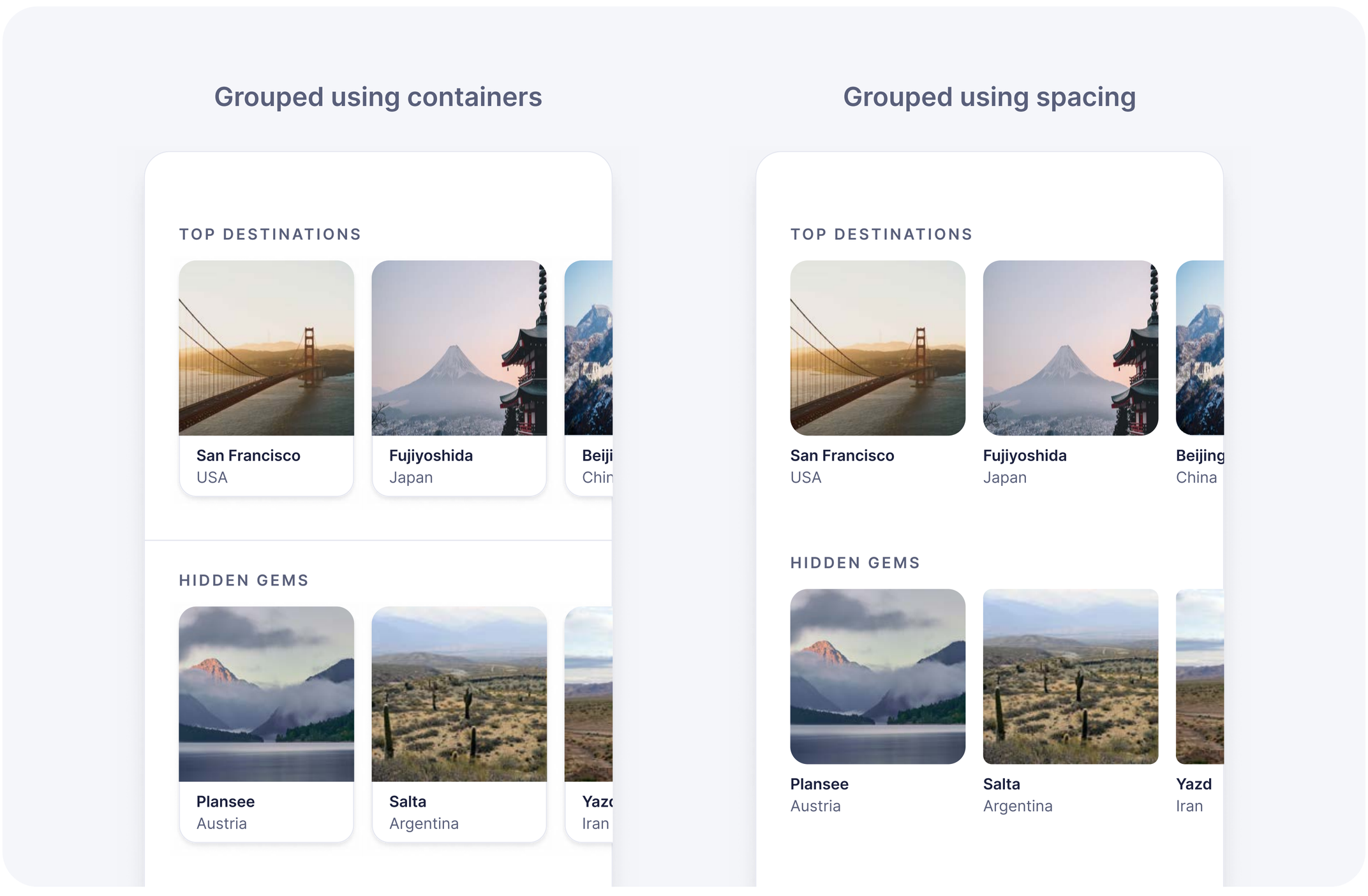
Try to avoid using containers for every group on an interface, as it can cause unnecessary clutter. Instead, look for opportunities to use other grouping methods. They’re often more subtle and can result in a simpler design, as you'll see next.

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2. Space related elements close together

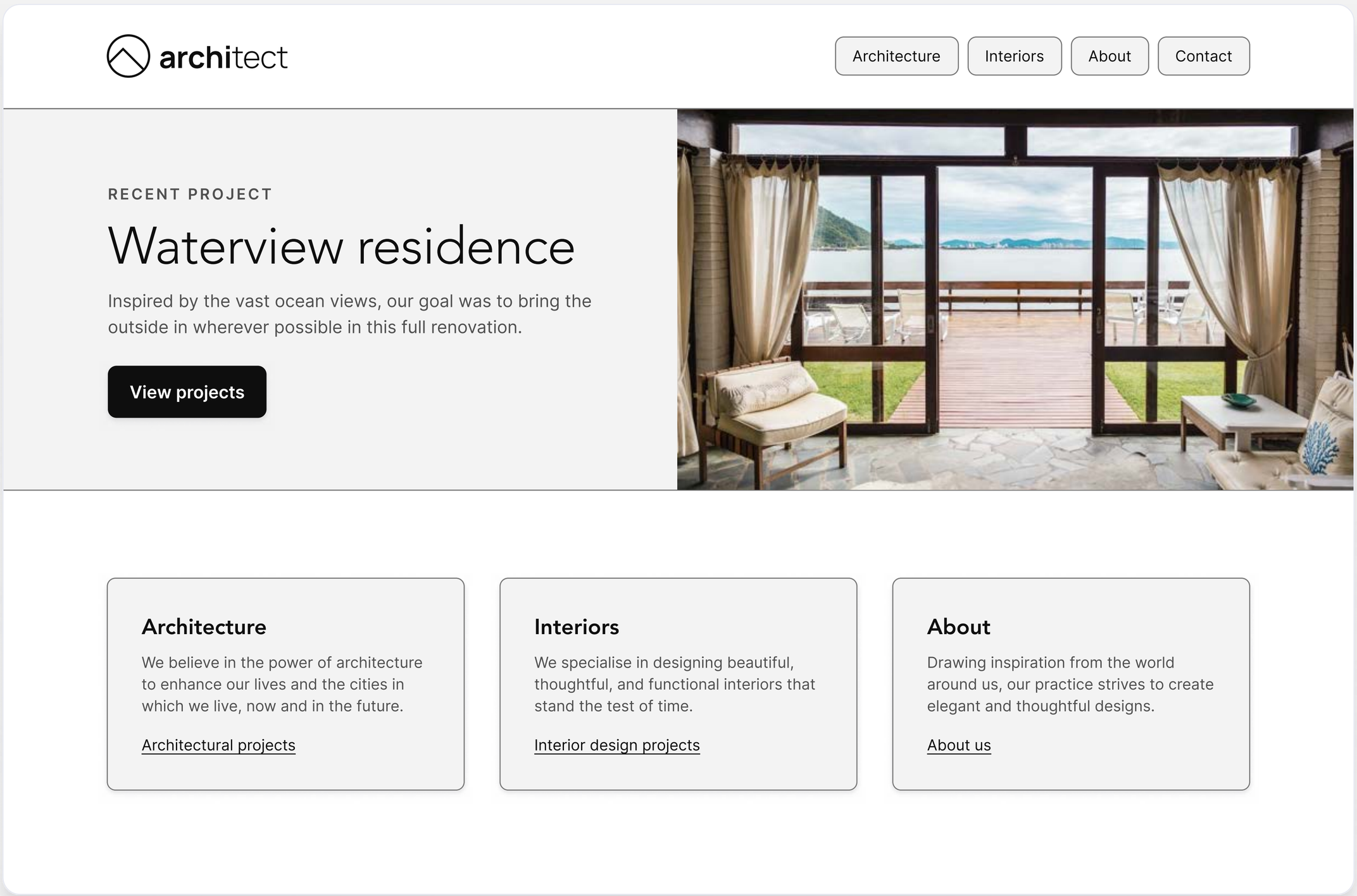
According to the principle of proximity, elements near each other are perceived as a group and assumed to be related. Place related elements close together to group them. Separate unrelated elements by placing more space between them. You'll learn how to create and use a predefined spacing system later in this chapter.

Using spacing to create groups, rather than containers, can help declutter and simplify an interface.

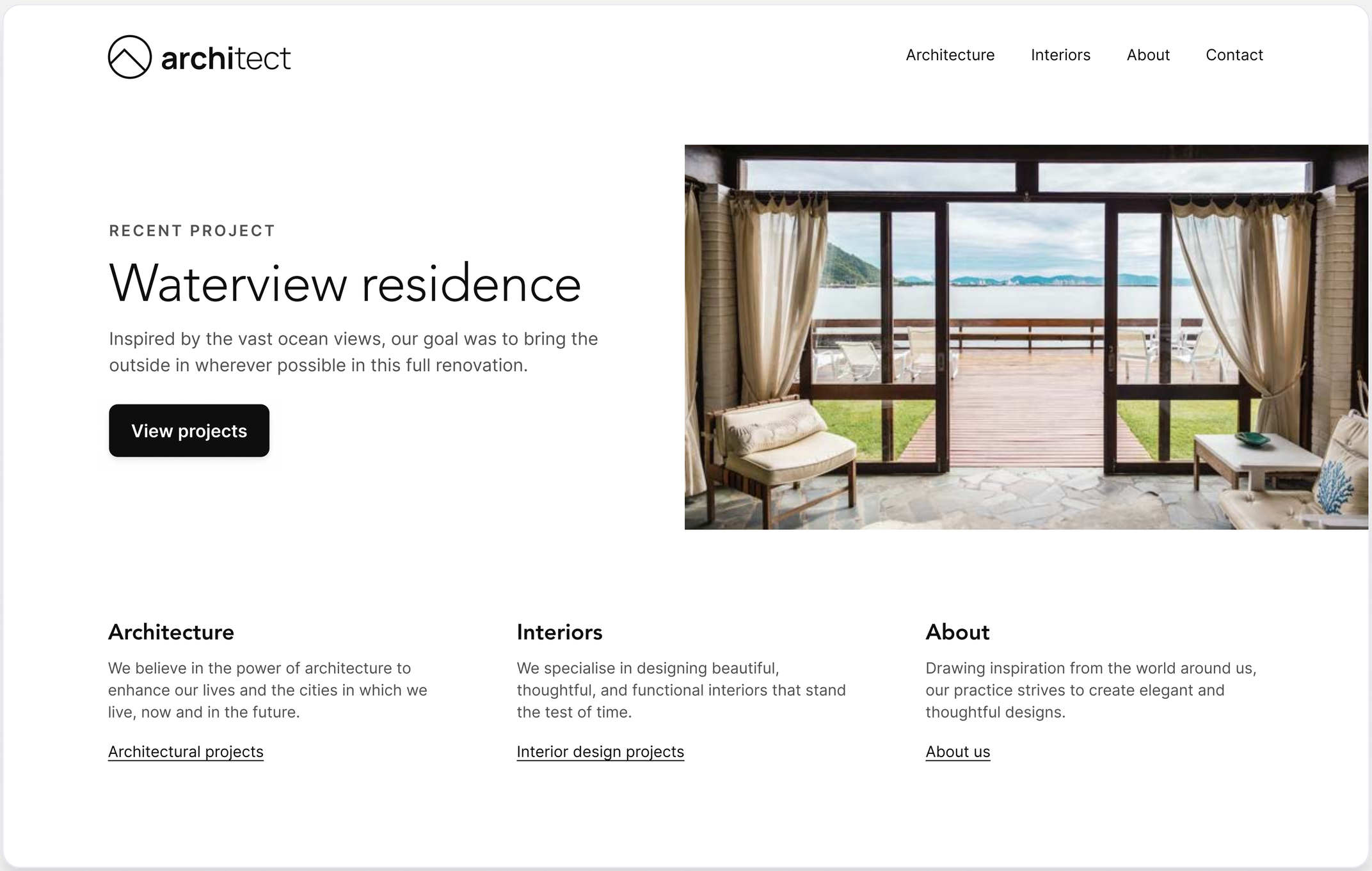


Similarly, the next example shows how removing containers can help simplify an interface. Sometimes spacing is enough to clearly group related elements, especially when it's combined with other grouping methods like similarity and continuity.

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Removing the containers simplifies the design without losing the groupings. The spacing is sufficient to clearly separate different groups of content.

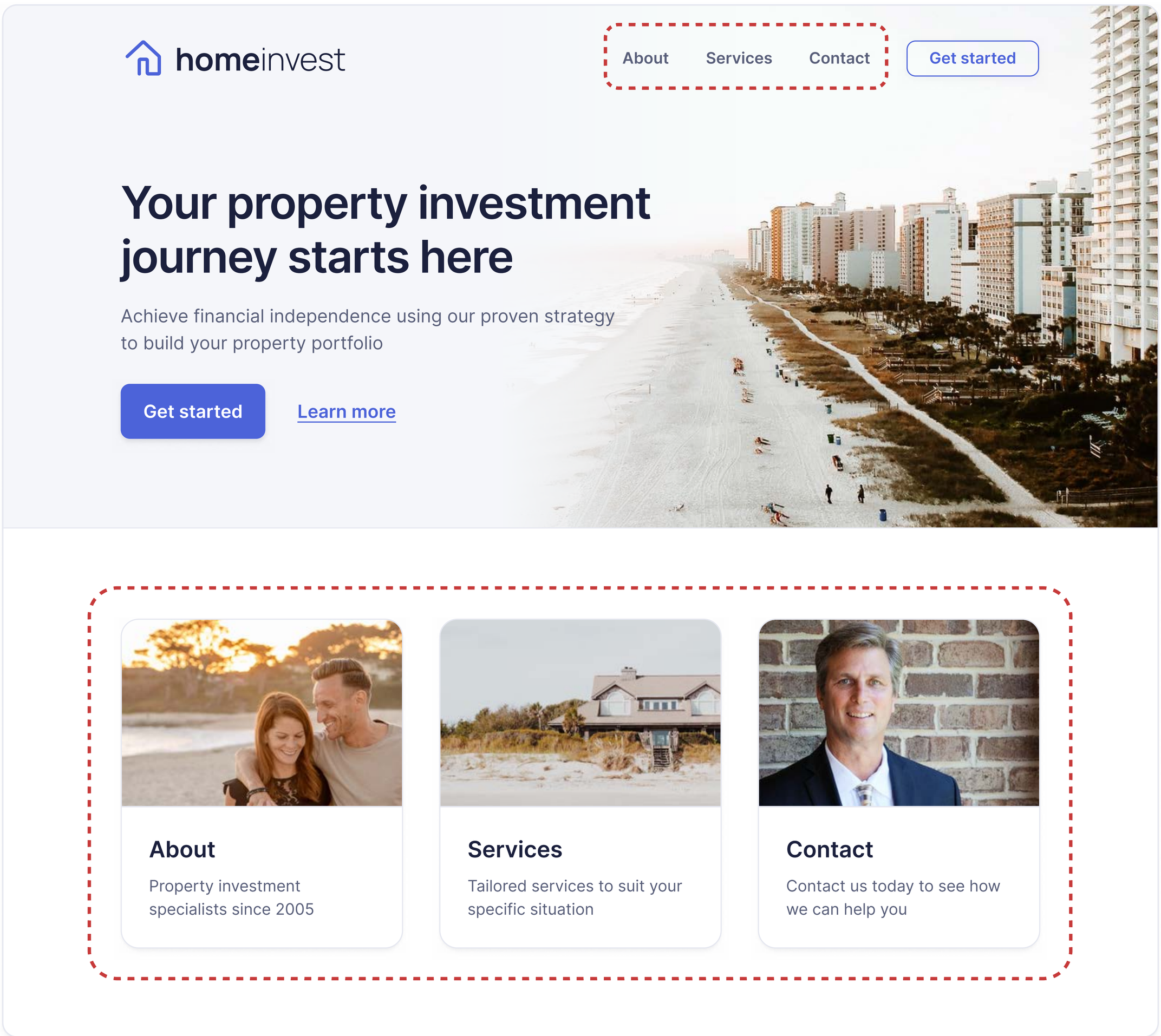


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3. Make related elements look similar

According to the principle of similarity, when things look similar your mind groups them together. Make related elements look similar by giving them similar visual characteristics, such as size, shape, and colour.

In the following example, your mind naturally groups the links in the top navigation because they look similar. The cards also appear to be grouped for the same reason. The fact that they're close together and aligned in a continuous line further emphasises their close relationship.

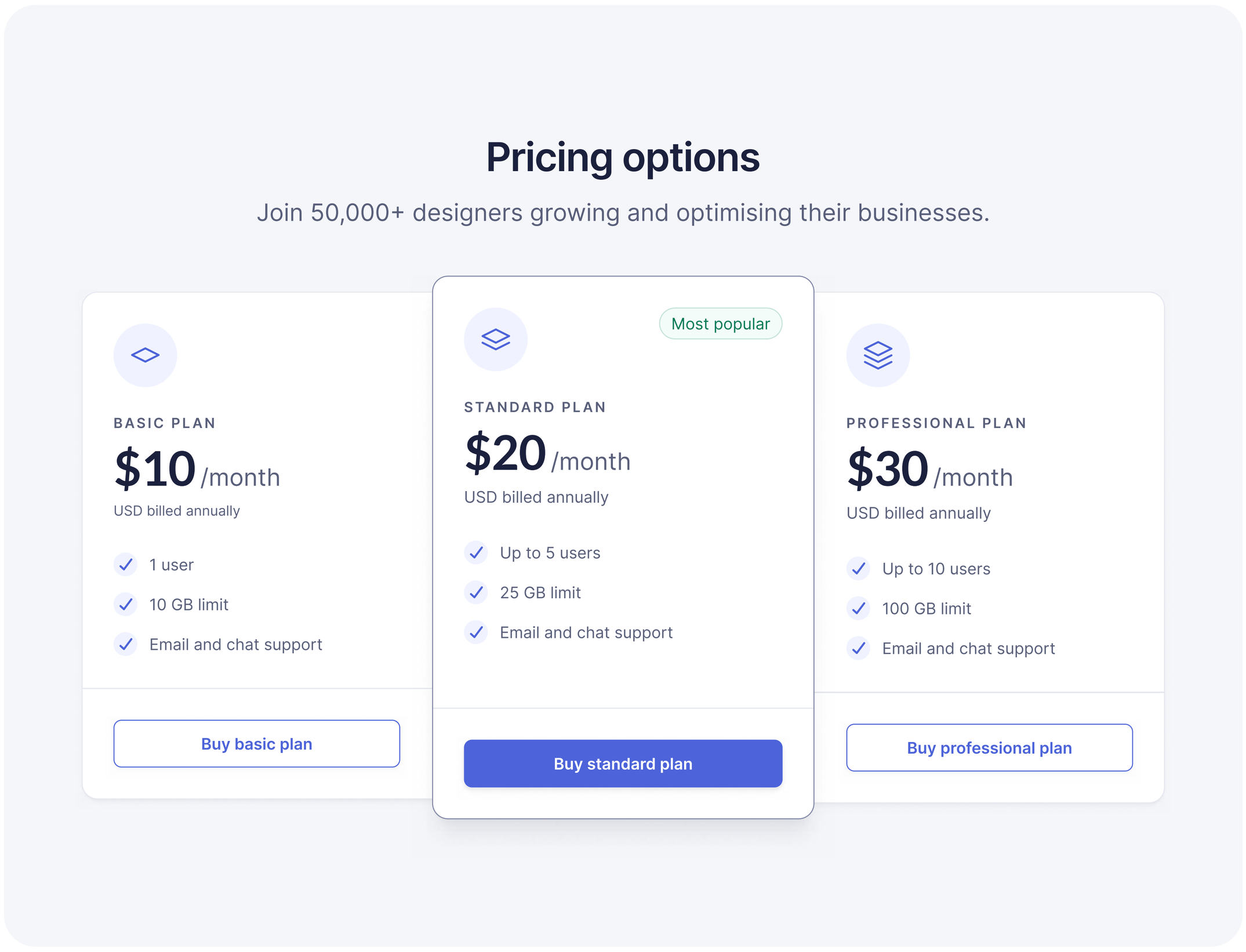


Examples of related elements being grouped by similarity

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Within a group of related elements, you can highlight certain ones by making them look slightly different. In the following example, the pricing options look similar enough that our eyes group them together.

The middle one stands out, as it looks slightly different. It’s larger, has a higher contrast border, a deeper shadow, a filled button, and a “most popular” badge.



The middle pricing option stands out, as it looks slightly different to the others.

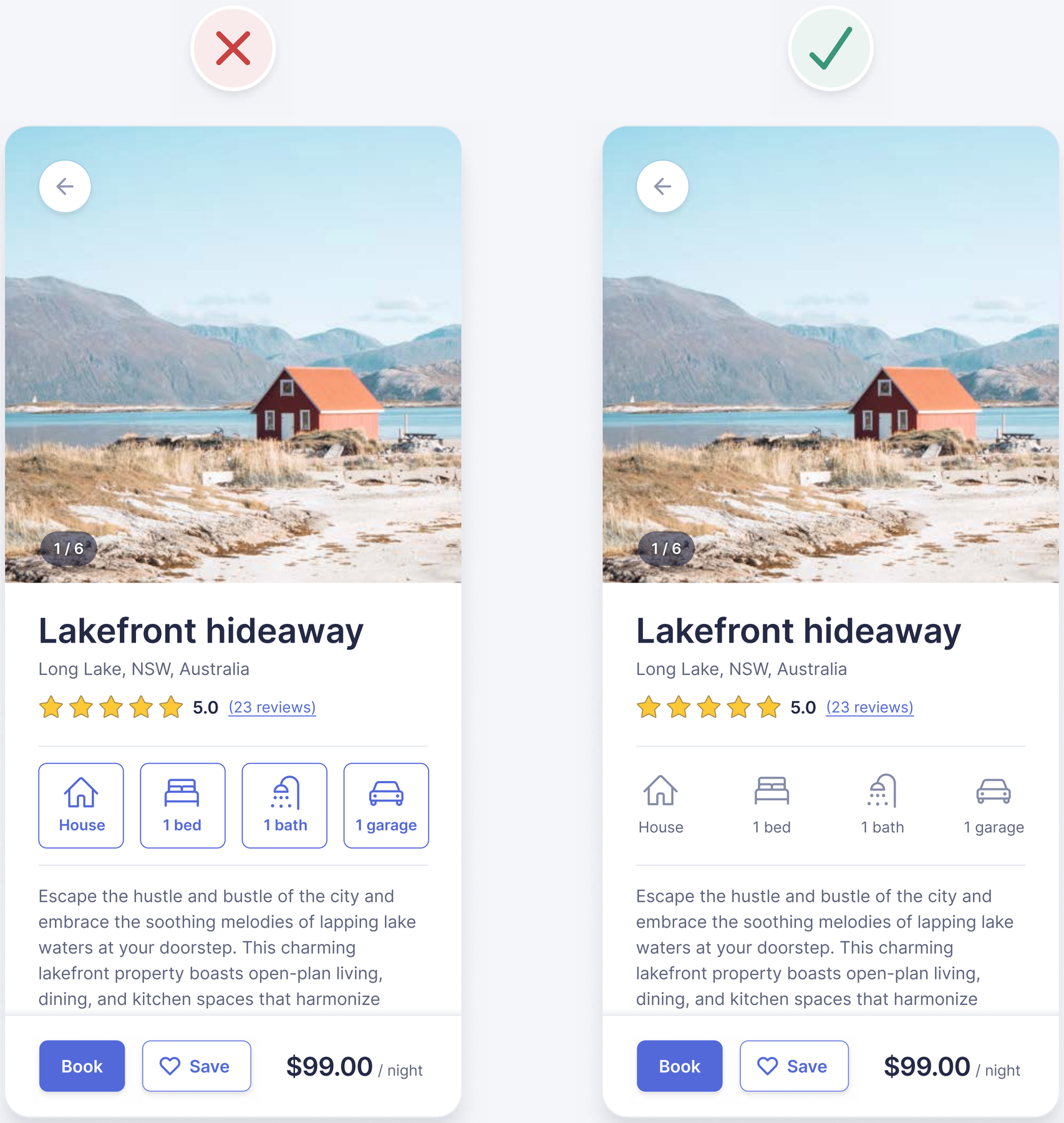
Ensure similar looking elements function similarly

If elements look similar, people will expect them to work in a similar way. So try to ensure that you use a consistent visual treatment for elements with the same functionality. Conversely, try to ensure elements with different functionality look different.

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In the following example, the icons look similar to the secondary “save” button. This makes them seem interactive, even though they’re not.

Removing the blue colour and border helps to differentiate the icons from the secondary button. This makes it clearer that the icons function differently to the secondary button.



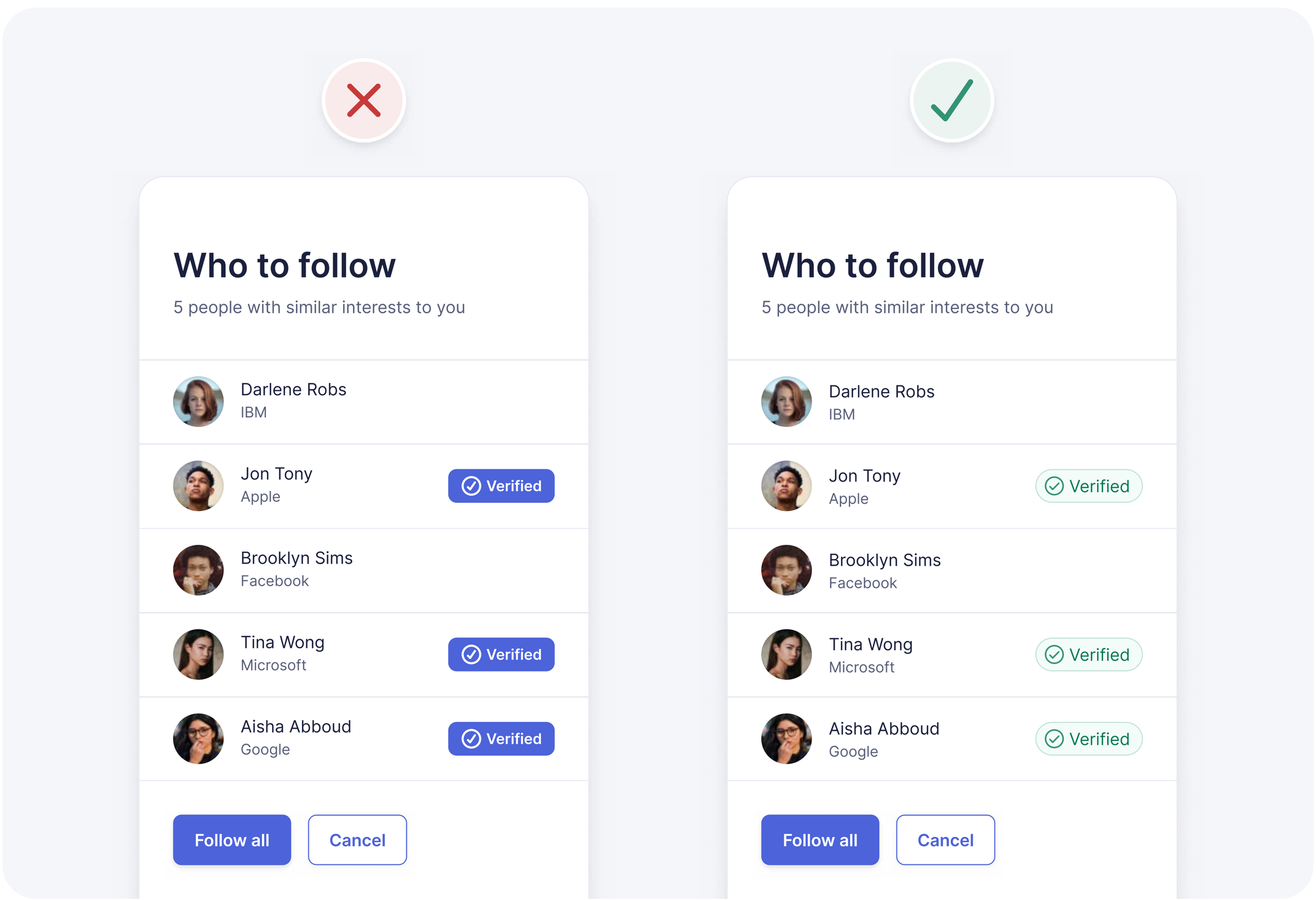
Because the icons look like the secondary button, they seem interactive, even though they’re not.

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In the next example, the “verified” badges look very similar to the primary “follow all” button. They’re not interactive elements, so they should look different to the primary button to help avoid confusion.

Change the shape, contrast, and colour of the badges in the following ways to help differentiate them from the primary button:

- Since the badges aren’t interactive, avoid using the blue action colour and instead use green to indicate success.
- A more rounded shape is commonly used for badges to help differentiate them from buttons.
- A lighter background colour helps correct the visual hierarchy, so the primary button is the most prominent element.



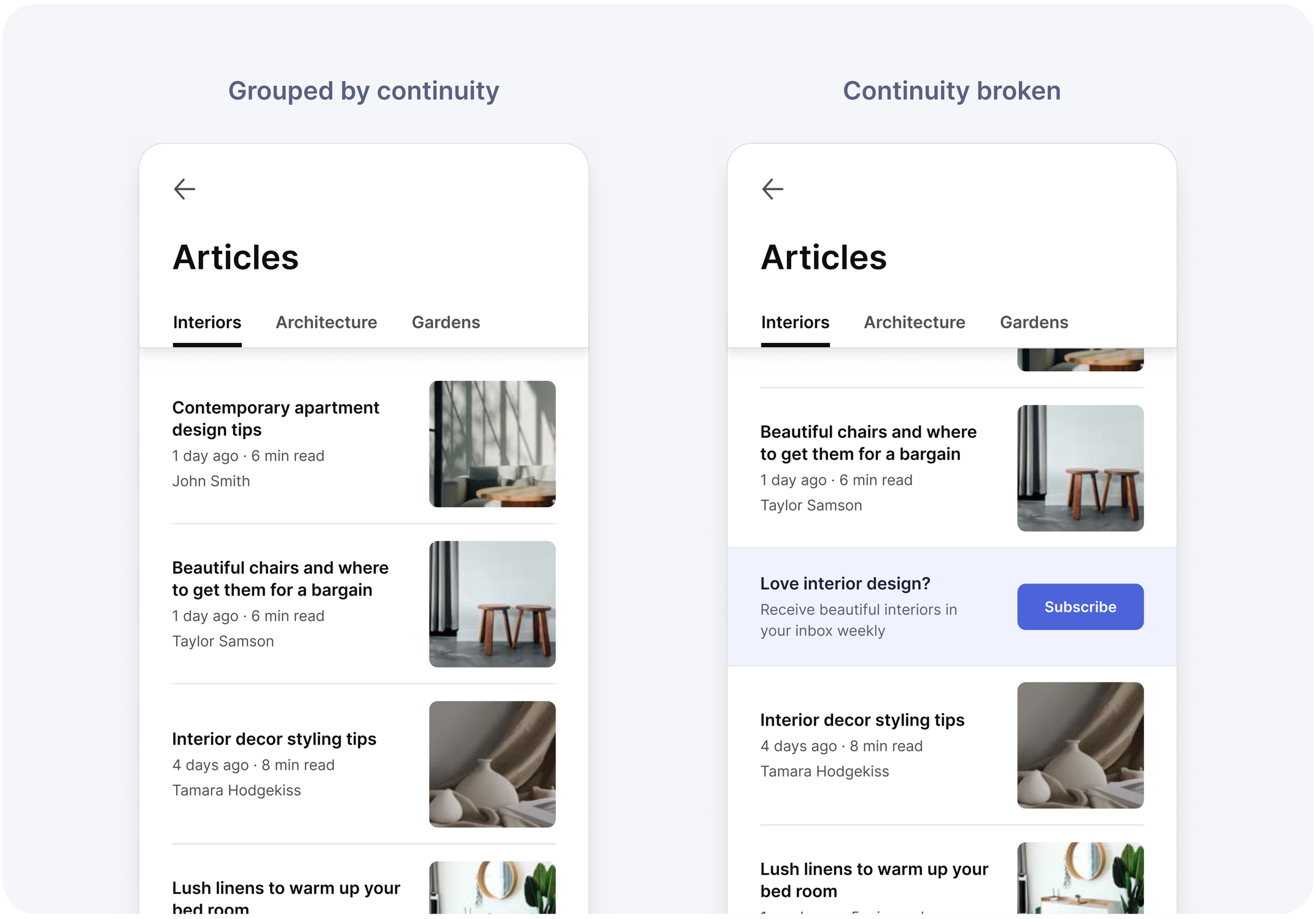
Because the badges look like the primary button, they seem interactive, even though they’re not.

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4. Align related elements in a continuous line

According to the principle of continuity, people perceive elements that are arranged in a continuous line to be related. Our eyes naturally tend to follow elements aligned in continuous straight or curved lines. You can use this to your advantage to help guide people's eyes through an interface.

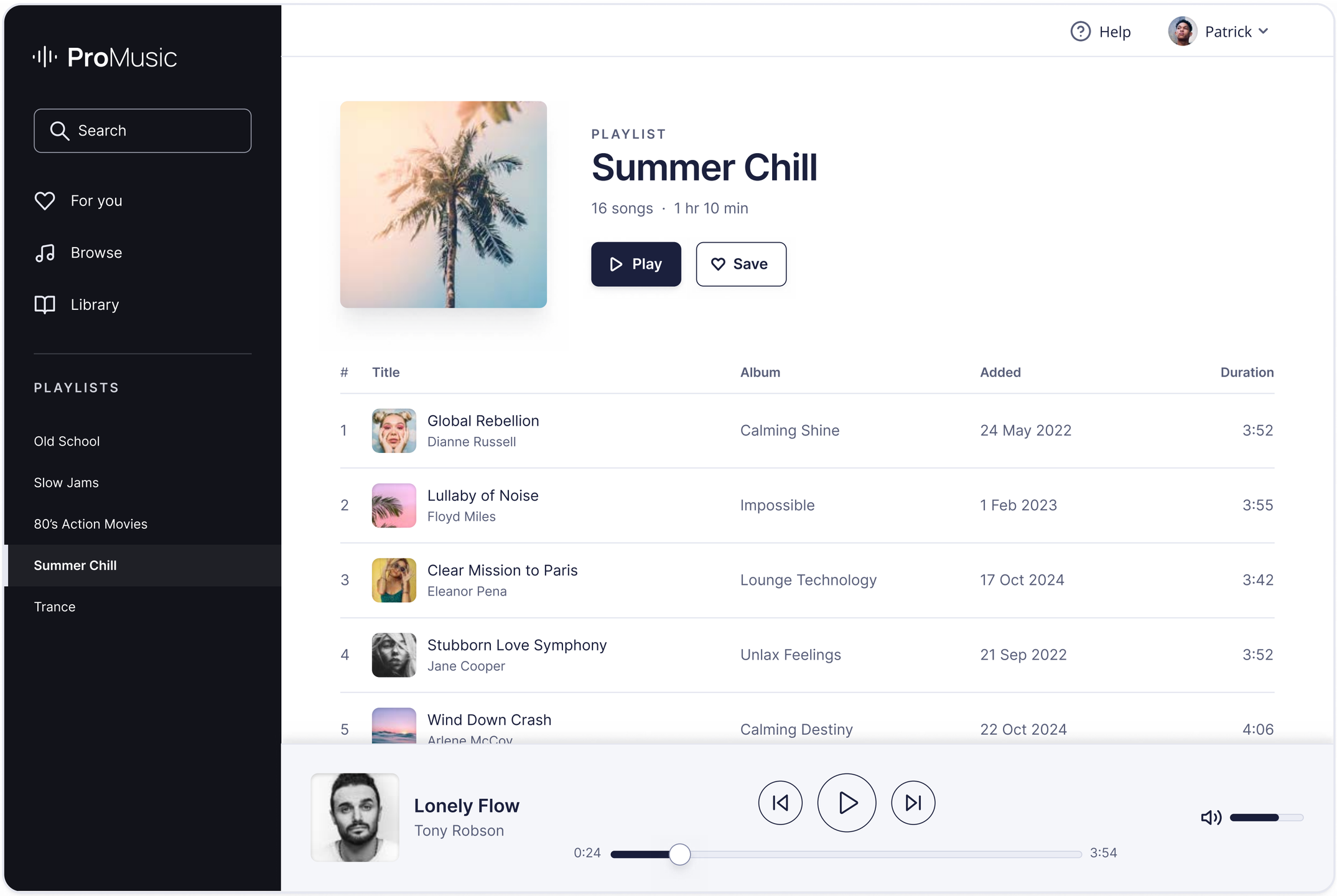
Lists are a common way of using continuity to group related elements in an interface. You can disrupt continuity to indicate the end of a group of related elements or to highlight a particular element.



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Grouping methods example

Let’s look at how different grouping methods are used and combined in the following music player example.



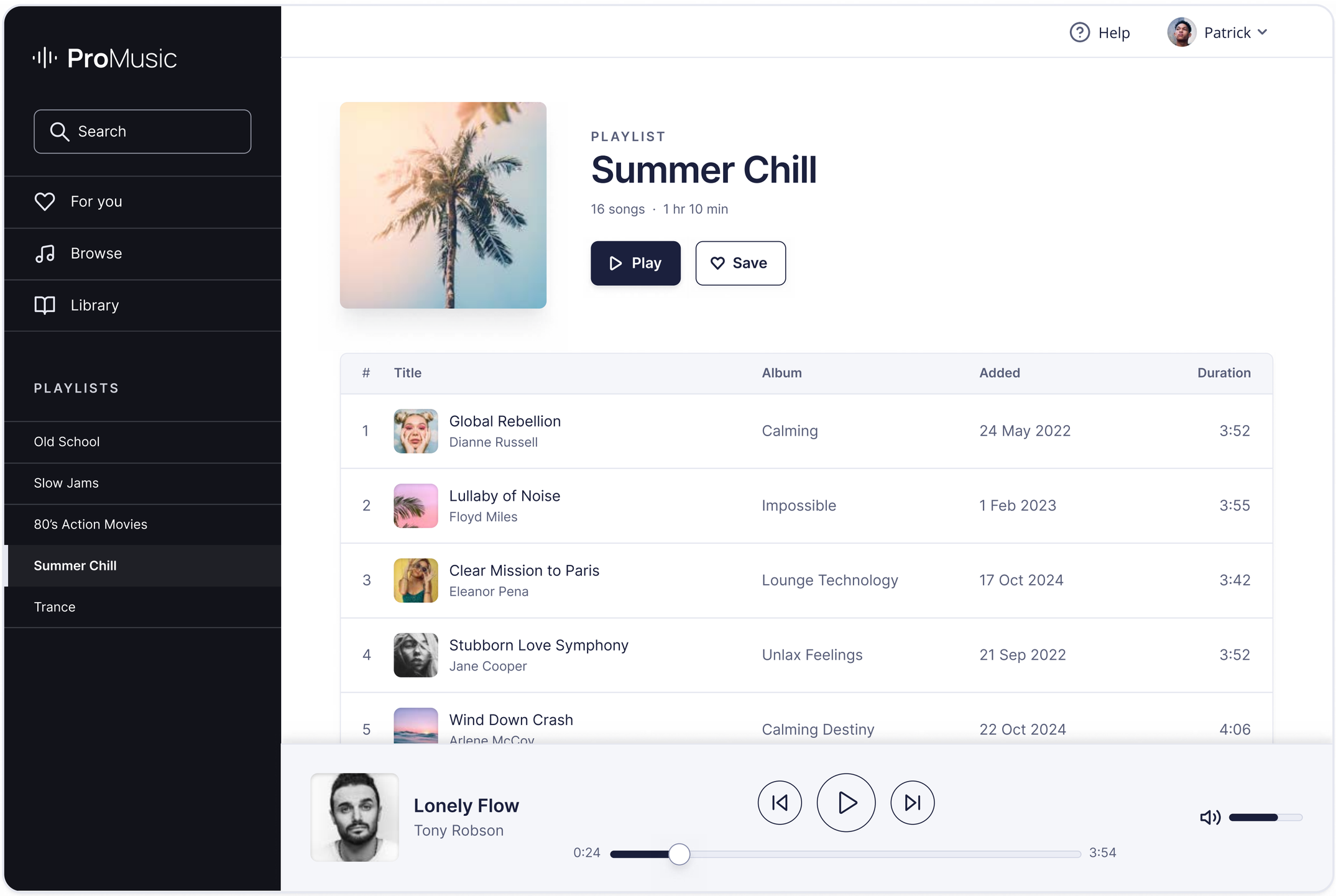
Containers are used to create the main structure of the interface:

- A dark grey background is used to contain the left side navigation.
- A light grey background and shadow are used to contain the music player controls along the bottom.
- A grey border is used to contain the account menu along the top.

All of these colours come from the monochromatic colour palette created previously in the “Colour” chapter.

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You might think of using a container to group the songs in the table, but it’s not always necessary.

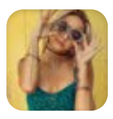


Container is used to group songs in the table

Look for opportunities to use grouping methods other than containers. This can help simplify an interface design. The songs in the table are grouped in multiple ways:

- They have a container
- They’re in close proximity
- They look similar
- They’re aligned in a continuous line

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#	Title	Album	Added	Duration
1	 Global Rebellion Dianne Russell	Calming	24 May 2022	3:52
2	 Lullaby of Noise Floyd Miles	Impossible	1 Feb 2023	3:55
3	 Clear Mission to Paris Eleanor Pena	Lounge Technology	17 Oct 2024	3:42
4	 Stubborn Love Symphony Jane Cooper	Unlax Feelings	21 Sep 2022	3:52
5	 Wind Down Crash Arlene McCoy	Calming Destiny	22 Oct 2024	4:06
6	 Lonely Flow Tony Robson	Summer Vibes	2 Dec 2024	3:48

Container is used to group songs in the table

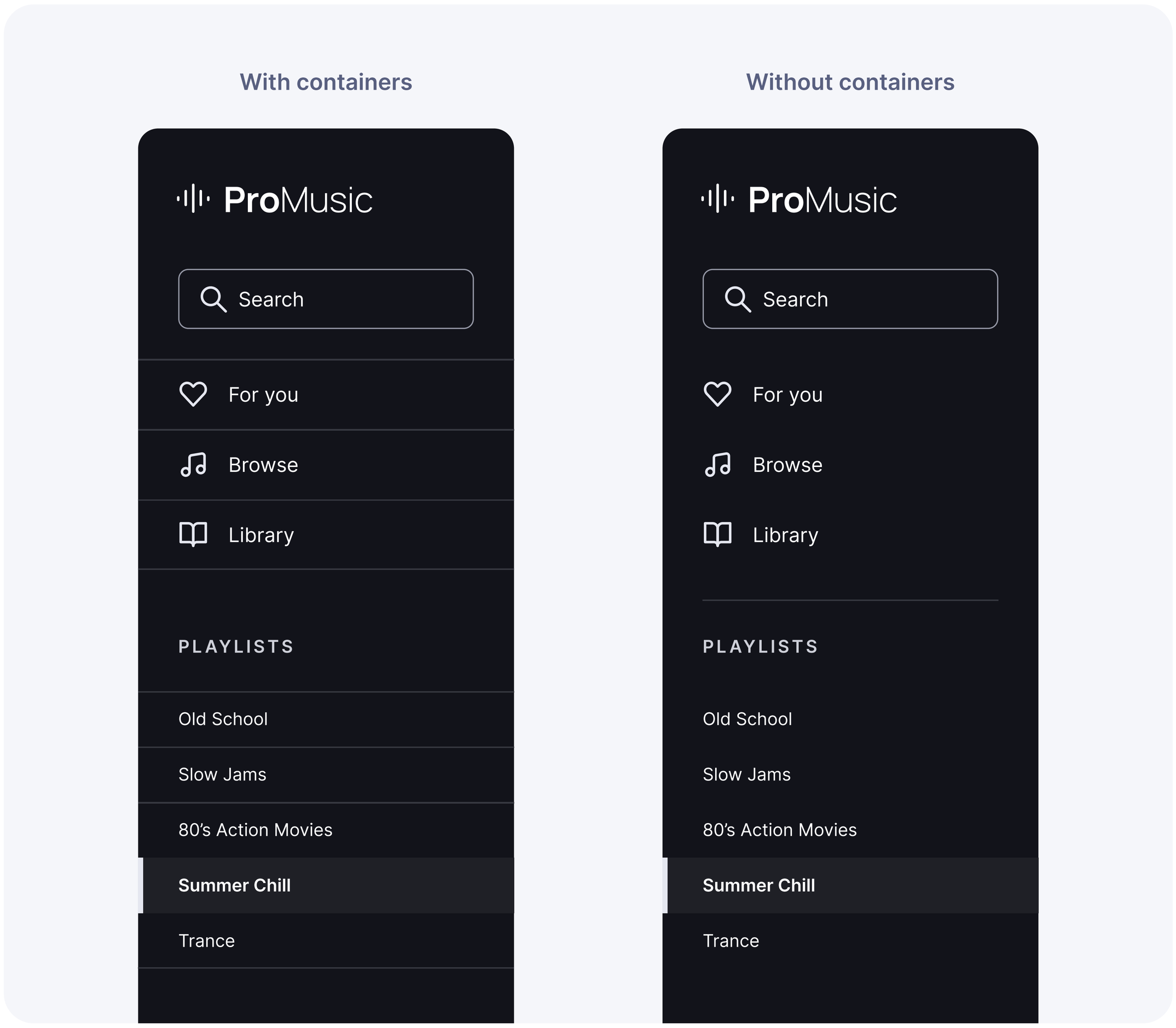
Since the songs are grouped using multiple methods, you can remove the outer container, and the songs still appear to be grouped.

#	Title	Album	Added	Duration
1	 Global Rebellion Dianne Russell	Calming Shine	24 May 2022	3:52
2	 Lullaby of Noise Floyd Miles	Impossible	1 Feb 2023	3:55
3	 Clear Mission to Paris Eleanor Pena	Lounge Technology	17 Oct 2024	3:42
4	 Stubborn Love Symphony Jane Cooper	Unlax Feelings	21 Sep 2022	3:52
5	 Wind Down Crash Arlene McCoy	Calming Destiny	22 Oct 2024	4:06
6	 Lonely Flow Tony Robson	Summer Vibes	2 Dec 2024	3:48

Container is removed from the table for simplicity

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Similarly, you can simplify the side navigation by removing unnecessary containers.

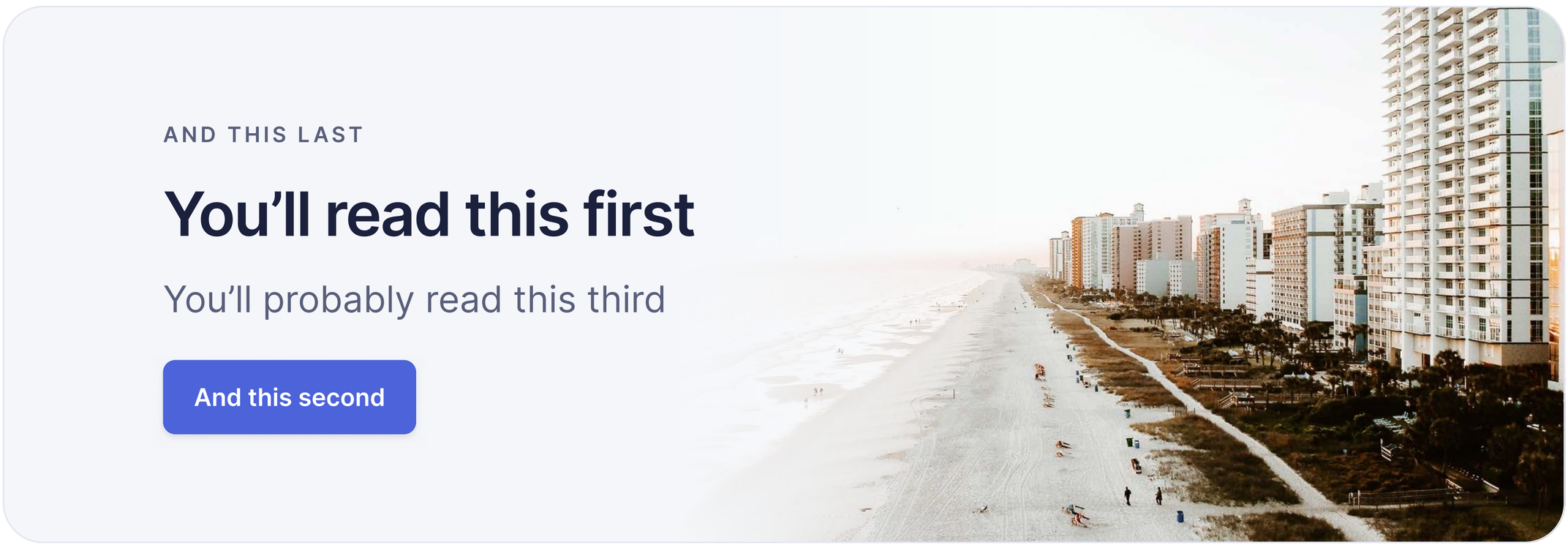


Containers, proximity, similarity, and continuity are simple but powerful methods for grouping interface elements. Use them individually or combine them for clarity.

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Create a clear visual hierarchy

Not all information in an interface has the same level of importance. Aim to present information in order of importance by making more important elements look more prominent. A clear order of importance, or visual hierarchy, helps people scan information quickly and focus on areas of interest. It also improves aesthetics by creating a sense of order.



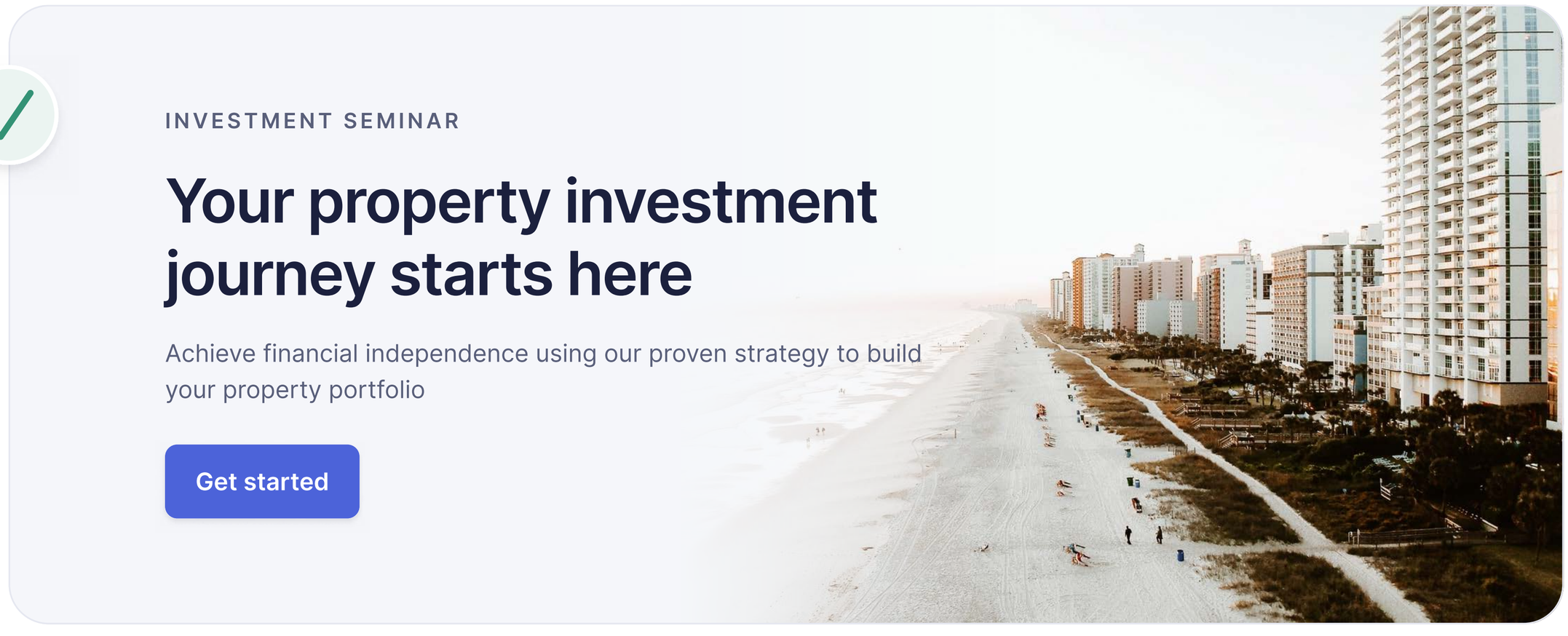
Example of a website banner with a clear visual hierarchy

Create a visual hierarchy using variations in the following:

- **Size** - make important elements larger.
- **Colour** - use brighter, richer, warmer, or higher contrast colours for more important elements.
- **Contrast** - style important elements differently to help them stand out.
- **Spacing** - surround important elements with more space.
- **Position** - place important elements toward the top of an interface or first in a row of multiple items.
- **Depth** - elevate important elements so they appear closer to users.

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The following hero banner example uses size, colour, and contrast to create a clear visual hierarchy. This makes it quicker and easier for people to find the information they need and take the appropriate action.



Example of a website banner with a clear visual hierarchy

Here’s the same hero banner without a clear visual hierarchy. Because all interface elements have similar prominence, our eyes don’t know what to focus on first. This lack of order can cause confusion and increase cognitive load, plus it looks messy.



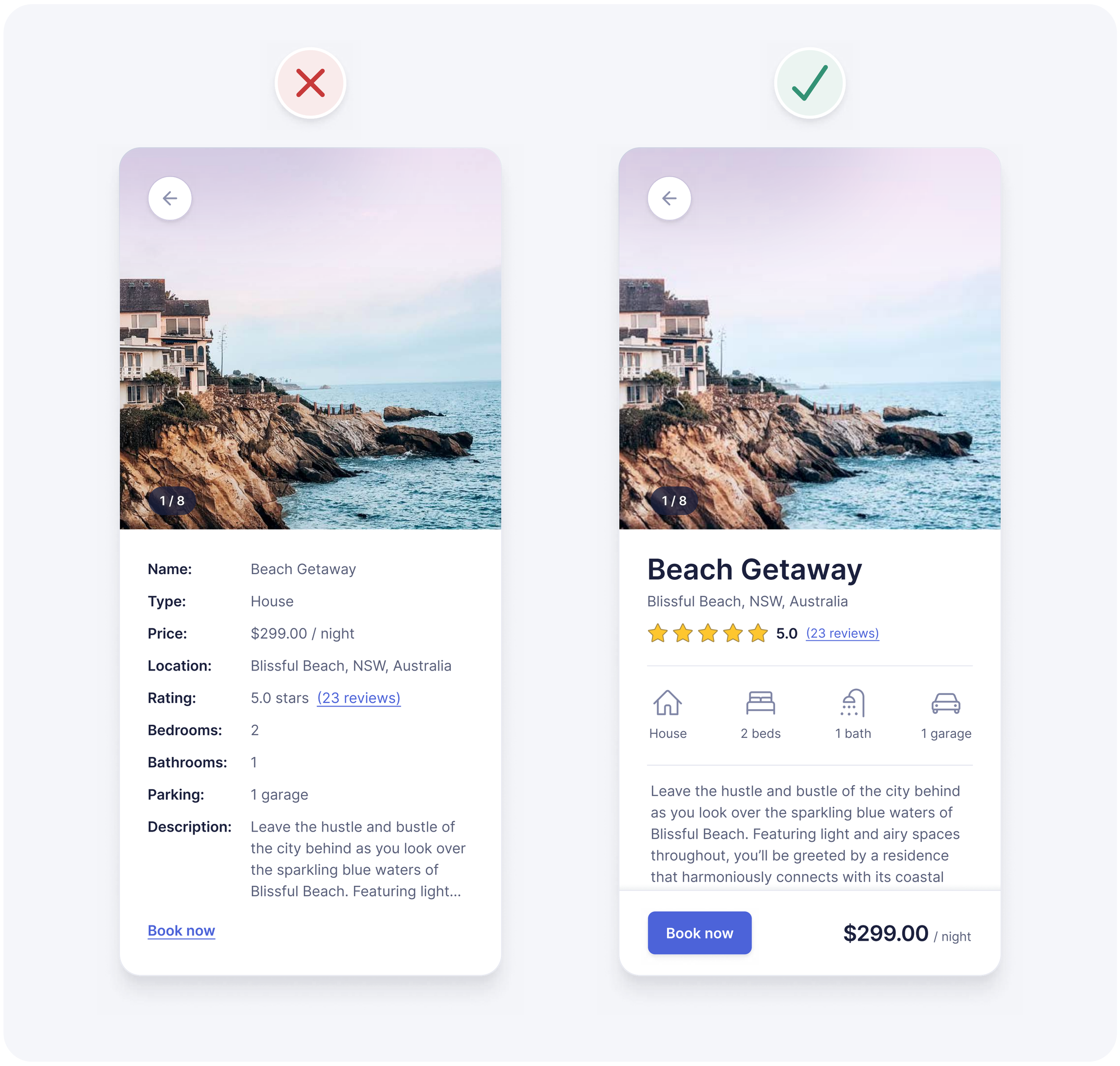
Example of a website banner without a clear visual hierarchy

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Practical steps to improve visual hierarchy

The following example of a property booking app demonstrates the power of visual hierarchy. The first design is a simple table of information where all elements have similar visual prominence. Other than the order of table rows, there's no clear order of importance. This can make it difficult to scan.

The second design is a lot easier to scan, as it has a clear visual hierarchy. You can improve visual hierarchy using variations in size, colour, contrast, spacing, position, and depth based on the importance of each element.



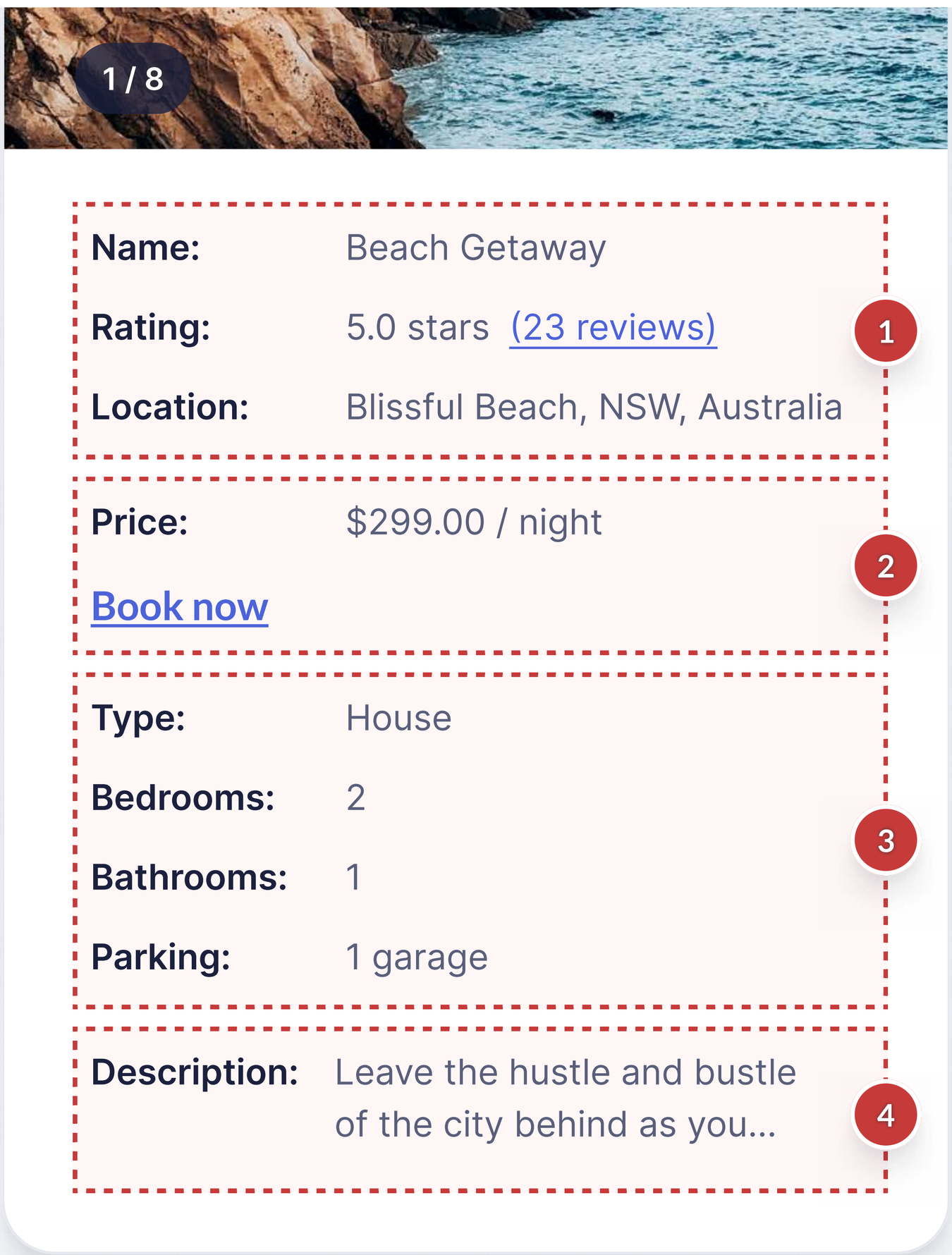
Example of an interface without a clear visual hierarchy versus one that has a clear visual hierarchy

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Starting with the first design example, let's fix the visual hierarchy, step by step. A similar approach can be taken for almost any interface:

- Firstly, group related information into separate sections. Order the information in each section by importance.
- Then order the sections by importance. Place more important sections towards the top of the interface to give them prominence.

This creates 4 main sections ordered by importance.



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Next, let's look at the elements in each section and change their styles based on their importance. In section 1, do the following:

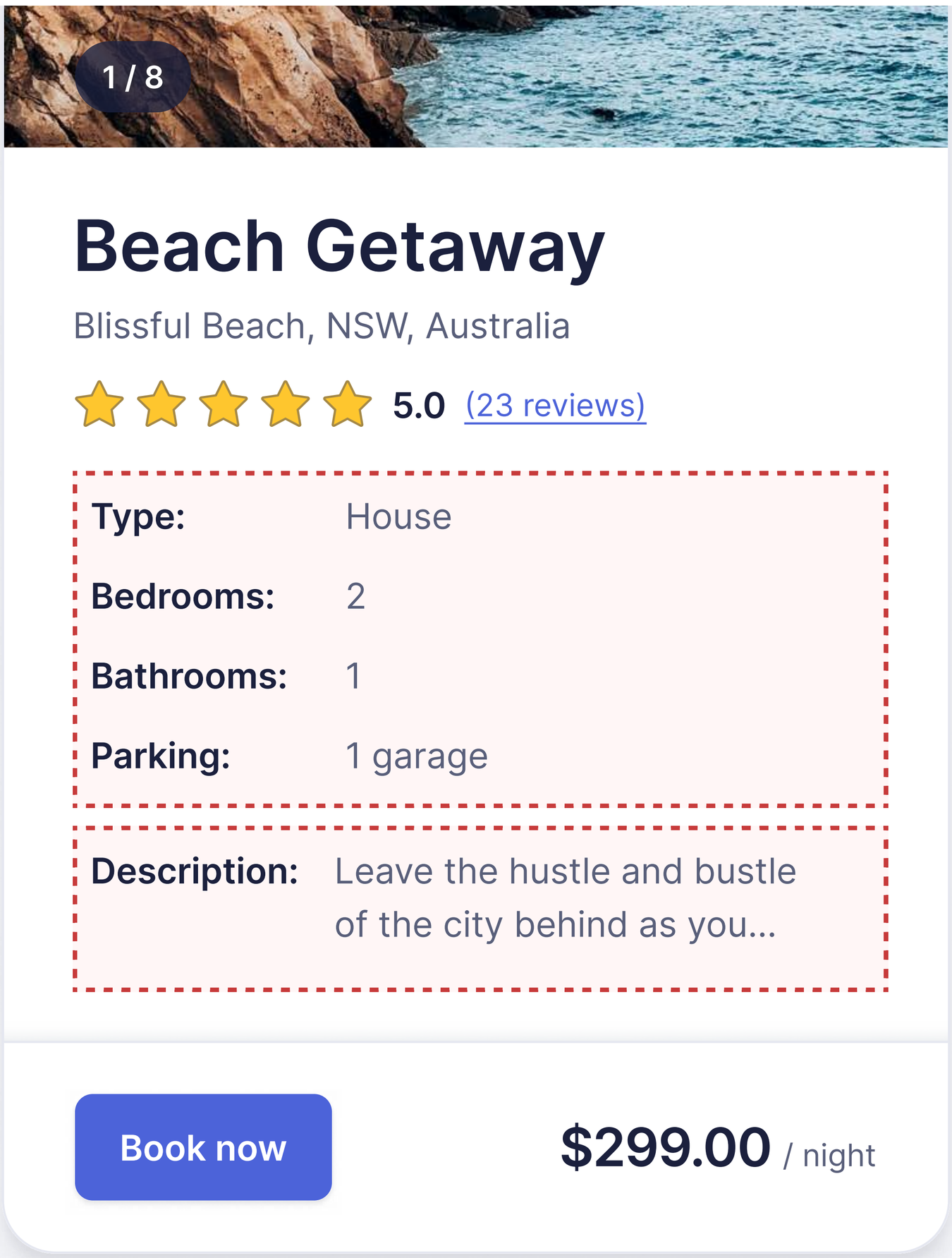
- Make the name large, bold, and use the "Text strong" colour variation from your colour palette. This ensures it stands out the most.
- Since the location is secondary information, make it smaller, regular weight, and use the "Text weak" colour variation.
- Introduce icons for the star rating to make it easier to scan. This also aligns with common UI design conventions, making it easier to understand as per Jakob's Law.



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The second section is also very important, as it contains the primary call to action and the price. In section 2, do the following:

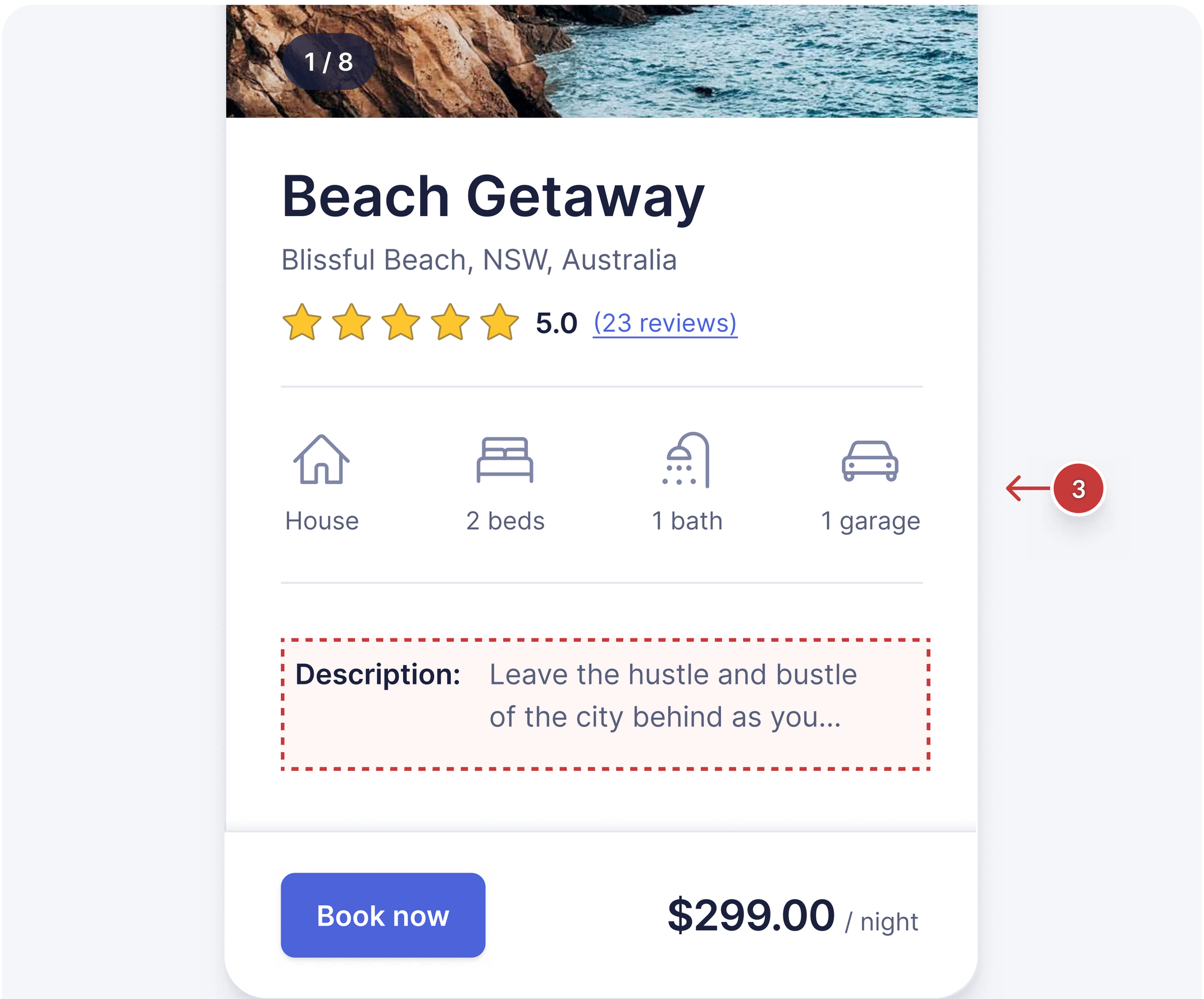
- To ensure the second section is always visible and within thumb's reach, elevate it using a shadow and stick it to the bottom of the screen.
- Increase the prominence of the primary call to action by making it a primary button with the brand colour.
- Highlight the price by making it bigger and bolder and placing it last on the interface next to the book button. According to The Serial Position Effect, people best remember the first and last items.



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The third section contains the property details, which are all short label-value pairs. In section 3, do the following:

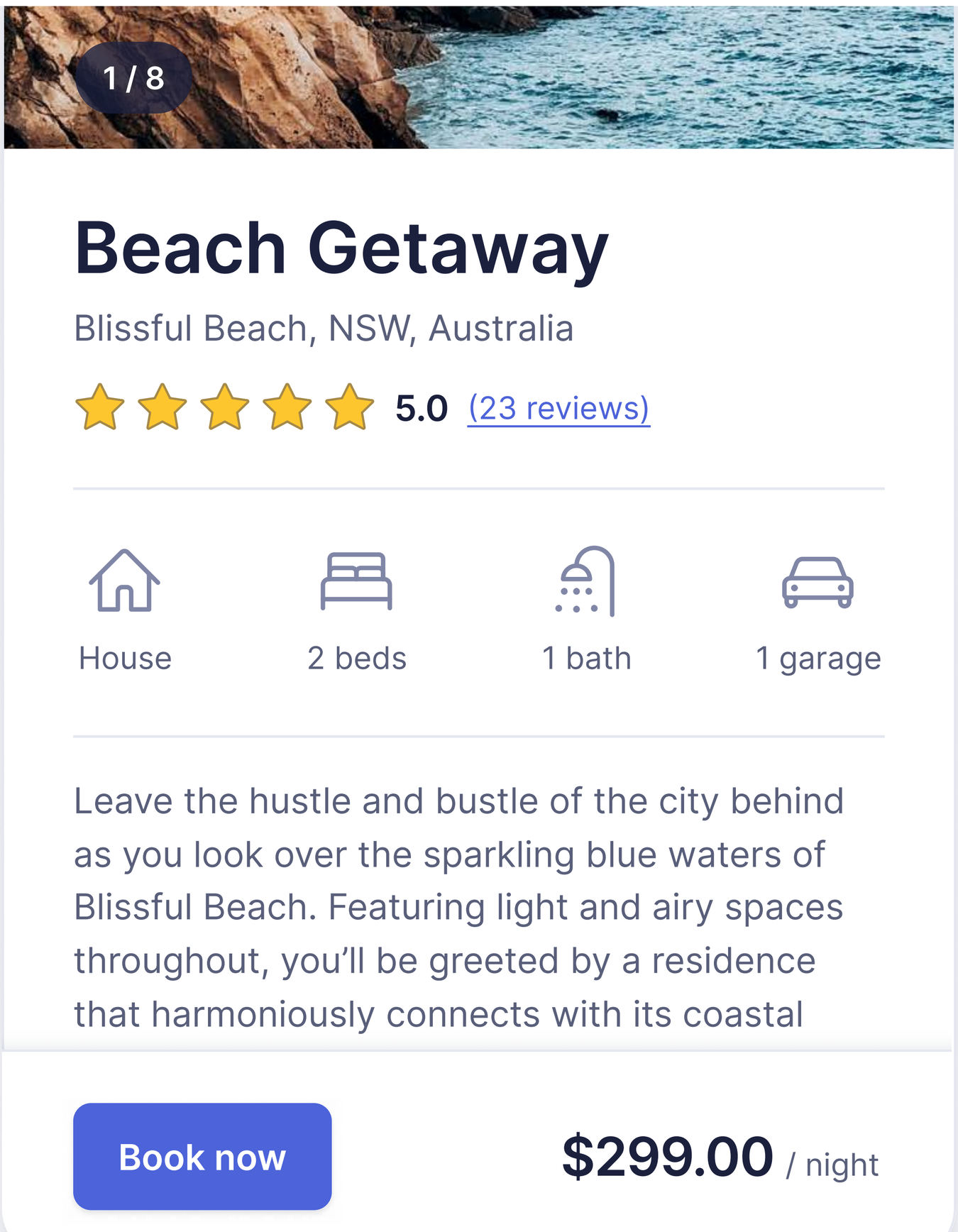
- Use icons with text labels to help make the property details easier to scan. Making the property details look similar helps group them together to show they're related.
- Since icons can be very prominent, use unfilled icons and the "Stroke strong" colour variation to decrease their prominence.
- Use the "Text weak" colour variation for the text labels, rather than the "Text strong" variation. This gives the text labels and icons similar prominence and creates balance.



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The last section contains the description. In section 4, do the following:

- Remove the “description” label as it’s already obvious what this information is for.
- Use the “Text weak” colour variation for the text at regular weight so it’s less prominent than section 2.



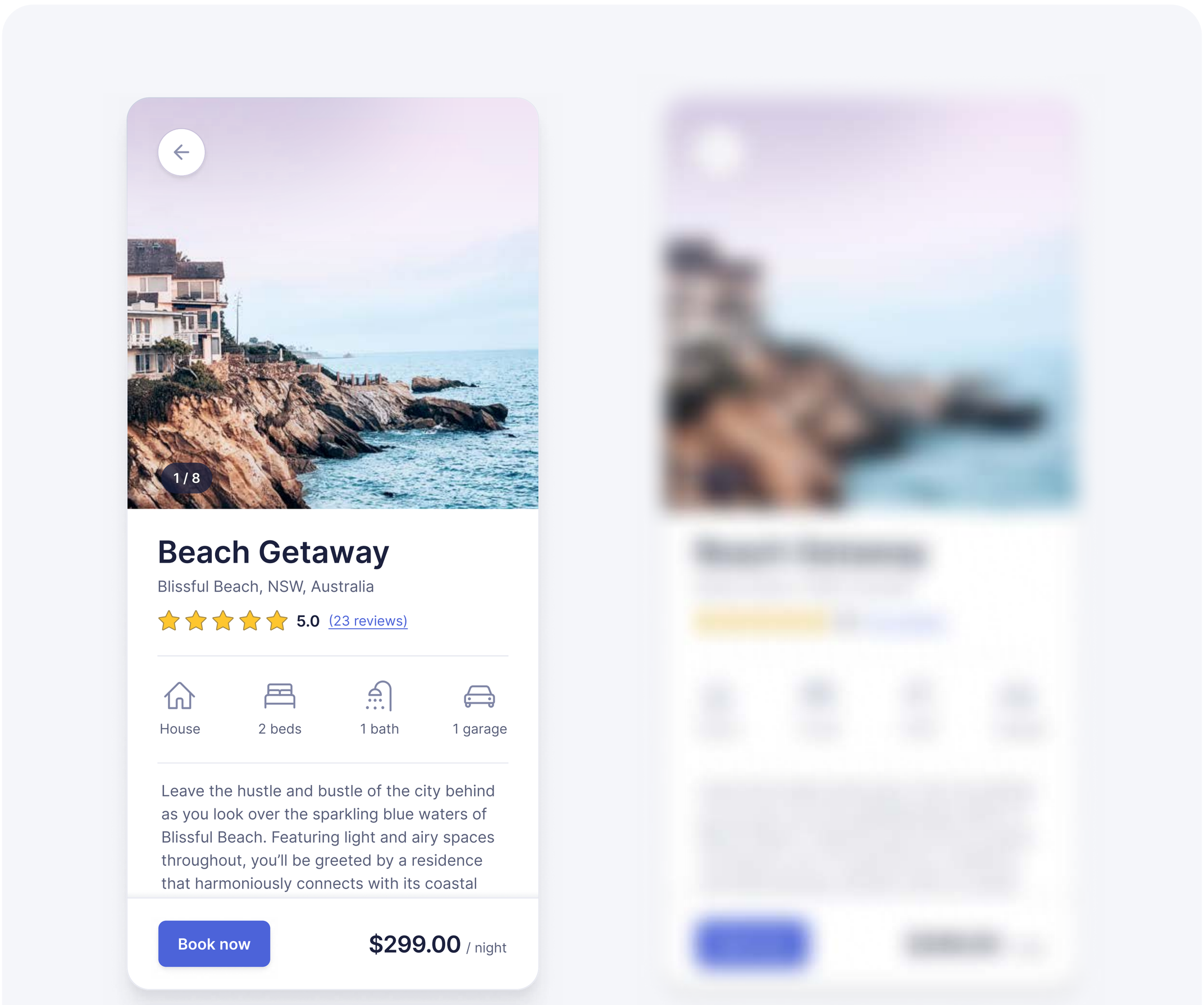
And we’re done! It’s amazing how some quick and simple variations in size, colour, contrast, spacing, position, and depth can help tidy up an interface and create a clear visual hierarchy.

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Test visual hierarchy using The Squint Test

A quick and easy way to test whether your visual hierarchy is correct is to use The Squint Test. Simply squint your eyes and look at your design. You should still be able to tell what the most important elements are and recognise what the interface is for. You could also try the following:

- Step back from your screen.
- Zoom out to make your design smaller.
- Blur your design (as seen below).



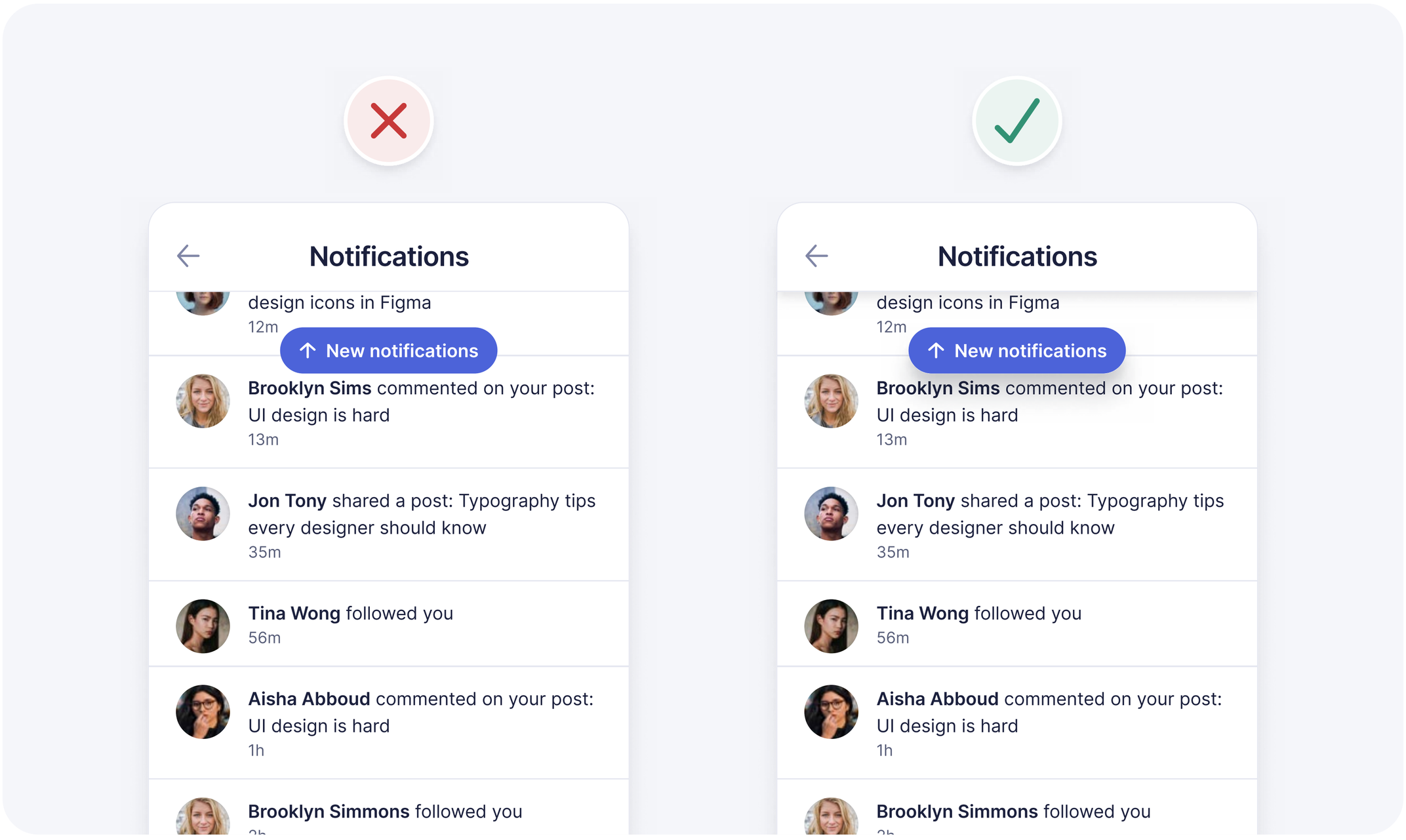
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Use depth to create visual hierarchy

To add depth to an interface, use colour and shadows to raise or lower interface elements to different levels of elevation. Elements with a higher elevation appear closer to you and are more prominent. Those with a lower elevation appear further away and are less prominent.

Use different levels of elevation to help create a clear order of importance or visual hierarchy. More important things should be elevated higher to make them more prominent. Elevation can also make interface elements feel interactive.

In the following example, you can see how adding depth makes the visual hierarchy clearer. Elevating the top header to sit above the notification feed ensures users can navigate back to the previous screen. Elevating the primary button even higher ensures it’s the most prominent element.



Example of depth being used to create visual hierarchy

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Understand the box model

You may have heard a joke that designers get paid to move rectangles around on a screen. While it's a very simplistic view, it's basically true. Interfaces are made up of lots of rectangles within rectangles.

It's important to understand how these rectangles, or boxes, work and interact. Each rectangle can have an outer margin, inner padding, and a border according to the box model:

- **Margin** - the space between the box and neighbouring boxes.
- **Border** - the stroke around the edge of the box.
- **Padding** - the space between the border and the contents of the box.

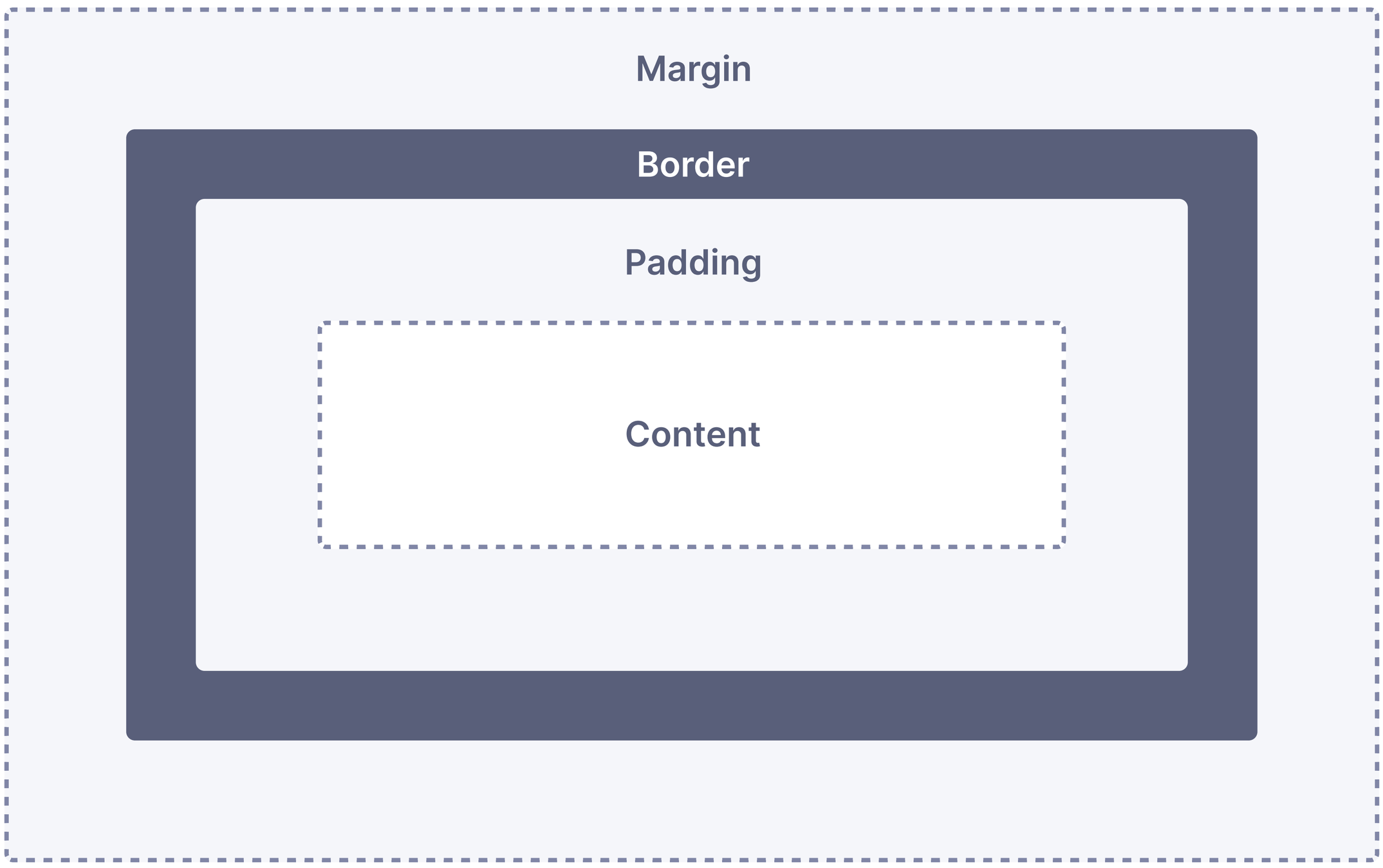
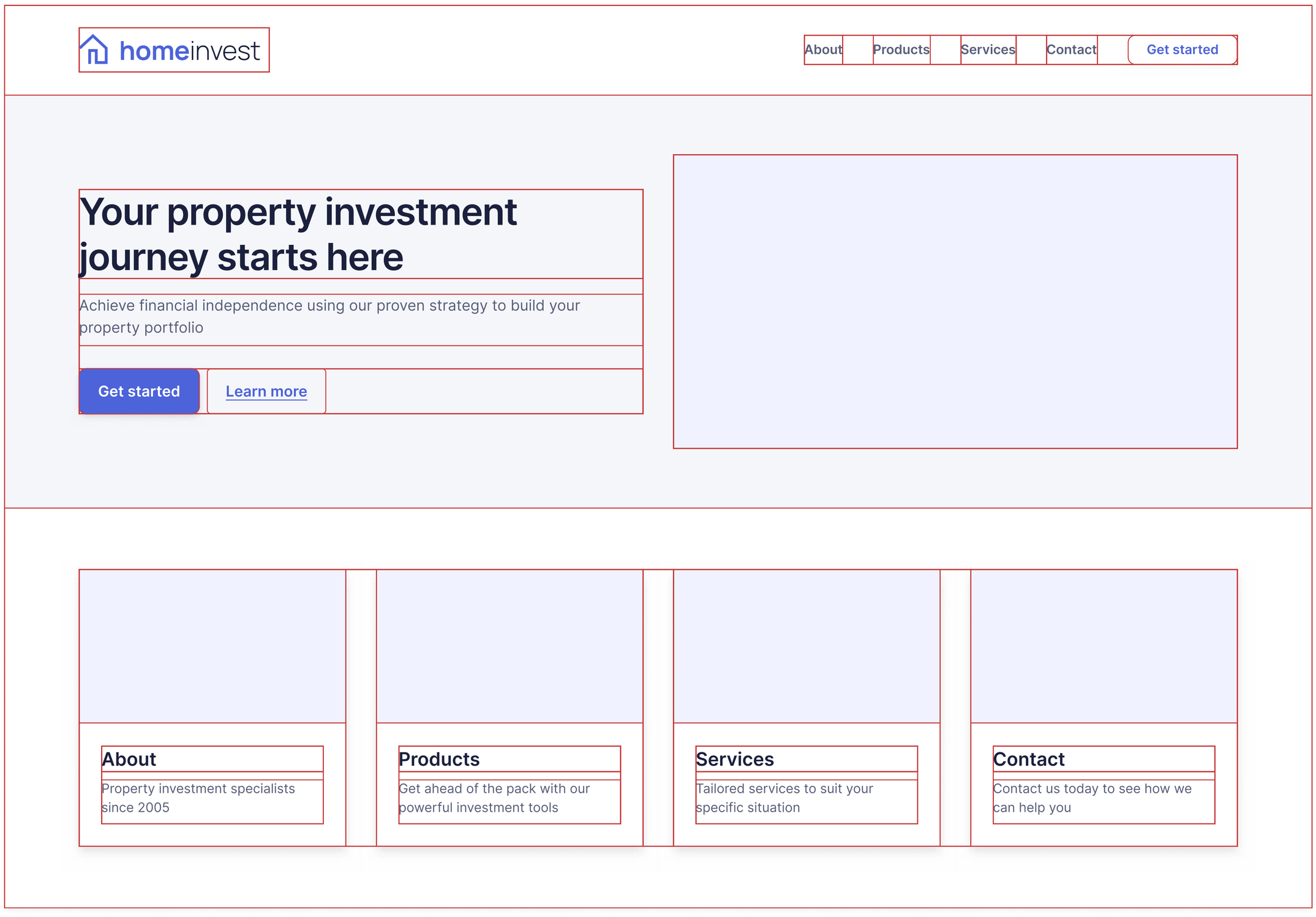


Diagram of the box model

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The following example illustrates how an interface is made up of smaller rectangles within larger ones. You'll also notice that the spacing between the innermost rectangles starts relatively small and gradually increases as you move outwards. You'll learn more about how to apply a predefined spacing system soon.



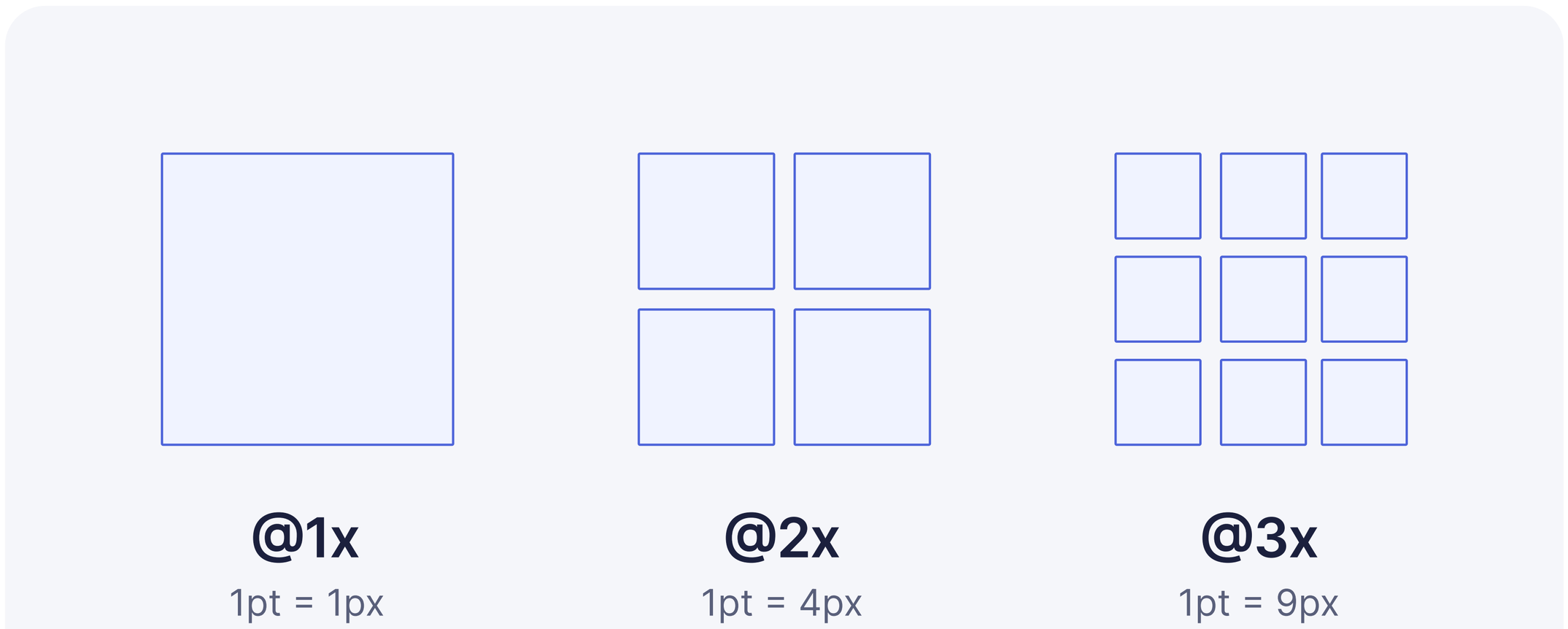
The red lines show how an interface is made up of smaller rectangles within larger ones

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Design @1x using points

Back when all screen resolutions were 72 ppi (pixels per inch), 1 point (pt) was equal to 1 pixel (px). A pixel is the smallest piece of a screen that can display colours.

Nowadays, screen resolutions are higher, so 1pt may be equal to 4px (2px x 2px) on a “@2x” resolution, or 9px (3px x 3px) on a “@3x” resolution.



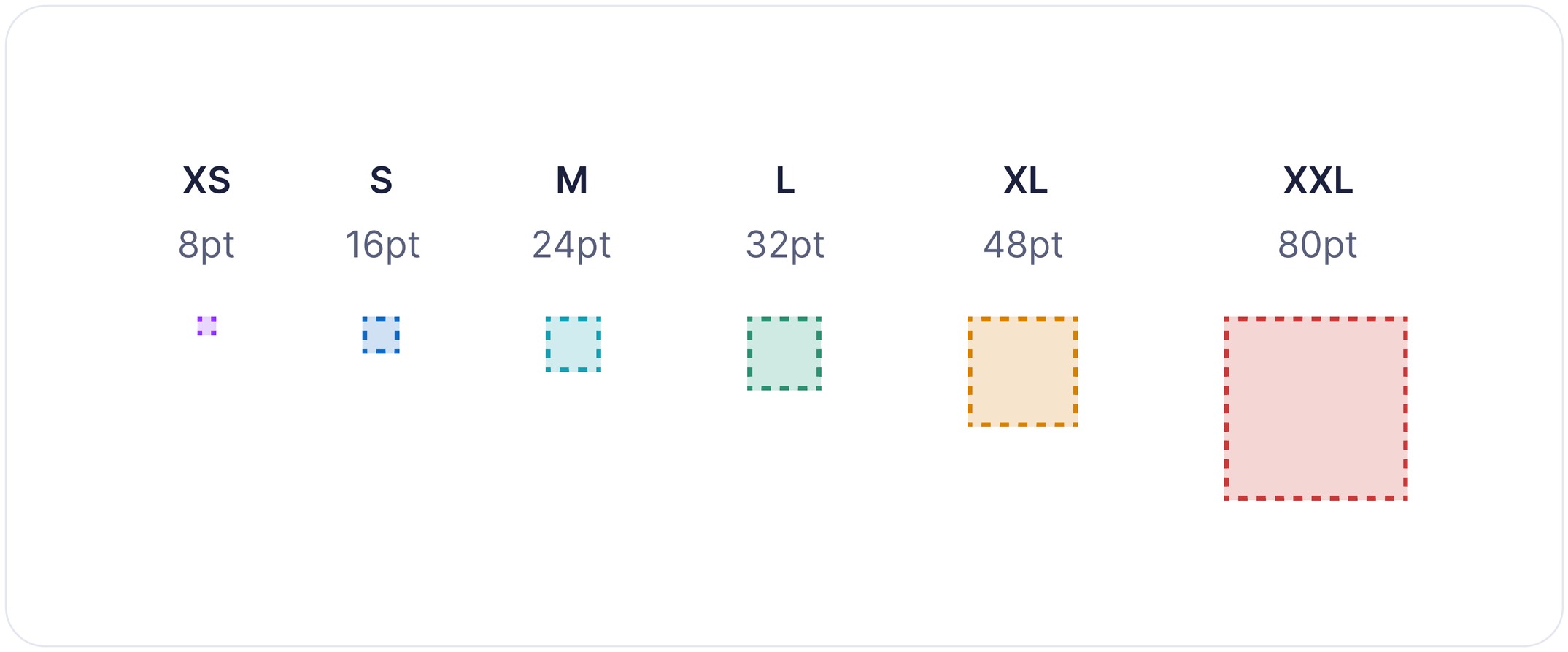
Points versus pixels on different screen resolutions

For UI design, always work in points. This is often called working “@1x” and most design tools are configured to work like this by default.

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Create a set of predefined spacing options

Deciding on the ideal spacing between interface elements can be a frustrating and time consuming task. There are endless options to choose from. Rather than using trial and error, one pixel at a time, create a simple set of predefined spacing options to make decisions faster.



An example set of predefined spacing options

Set simple t-shirt sized spacing options based on increments of 8 points. Why 8? Many popular screen sizes are divisible by 8 and it provides a bit more spacing flexibility than using 10 points.

This is also known as using an 8 point grid, as all interface elements will end up aligning to a series of vertical and horizontal guidelines separated by 8 points. For more detailed interfaces, you could use 4 point increments for a bit more control.

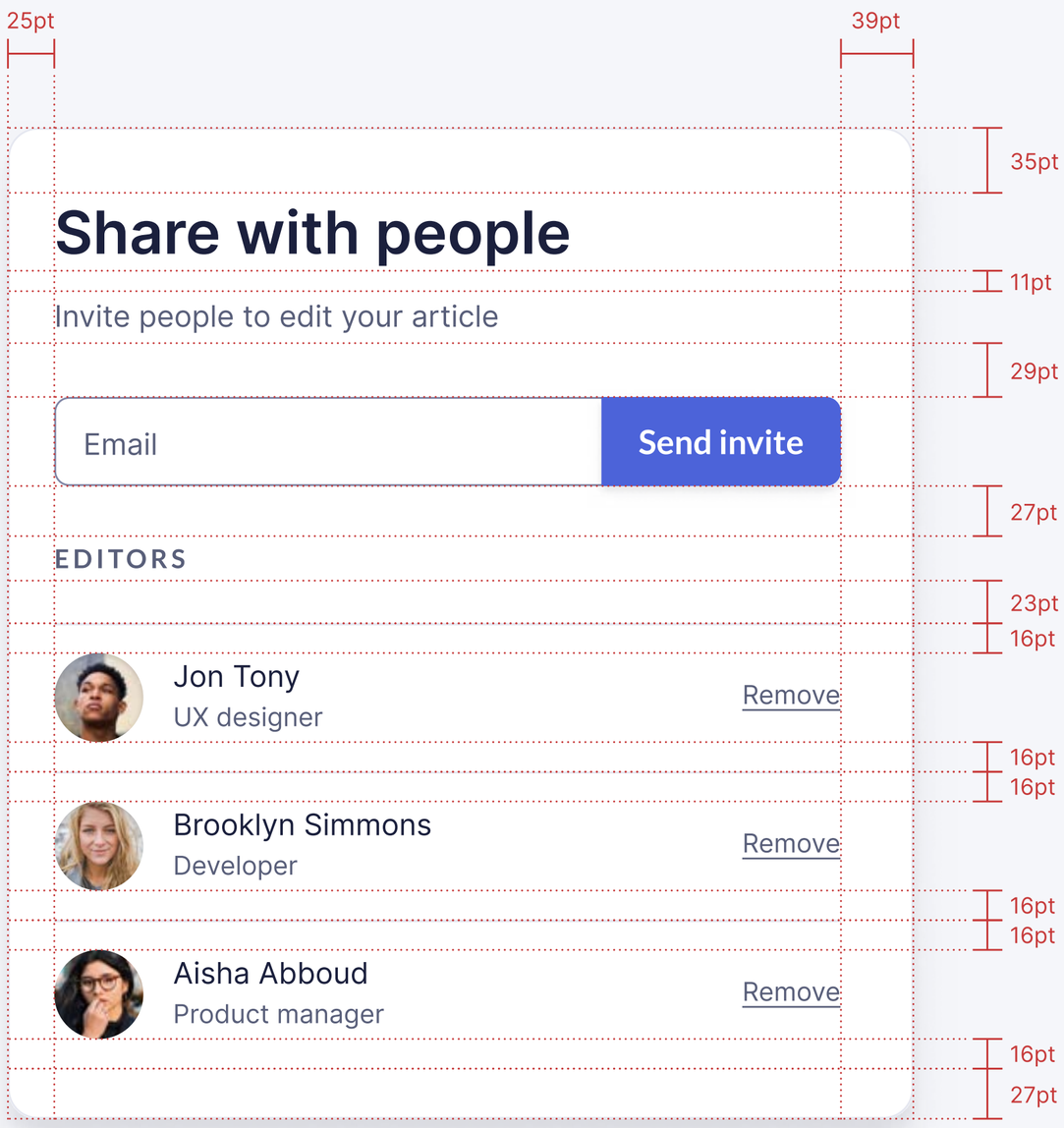
Much like a typography scale, your spacing options should grow by larger amounts as they get bigger. This ensures that spacing is proportional for larger interface elements.

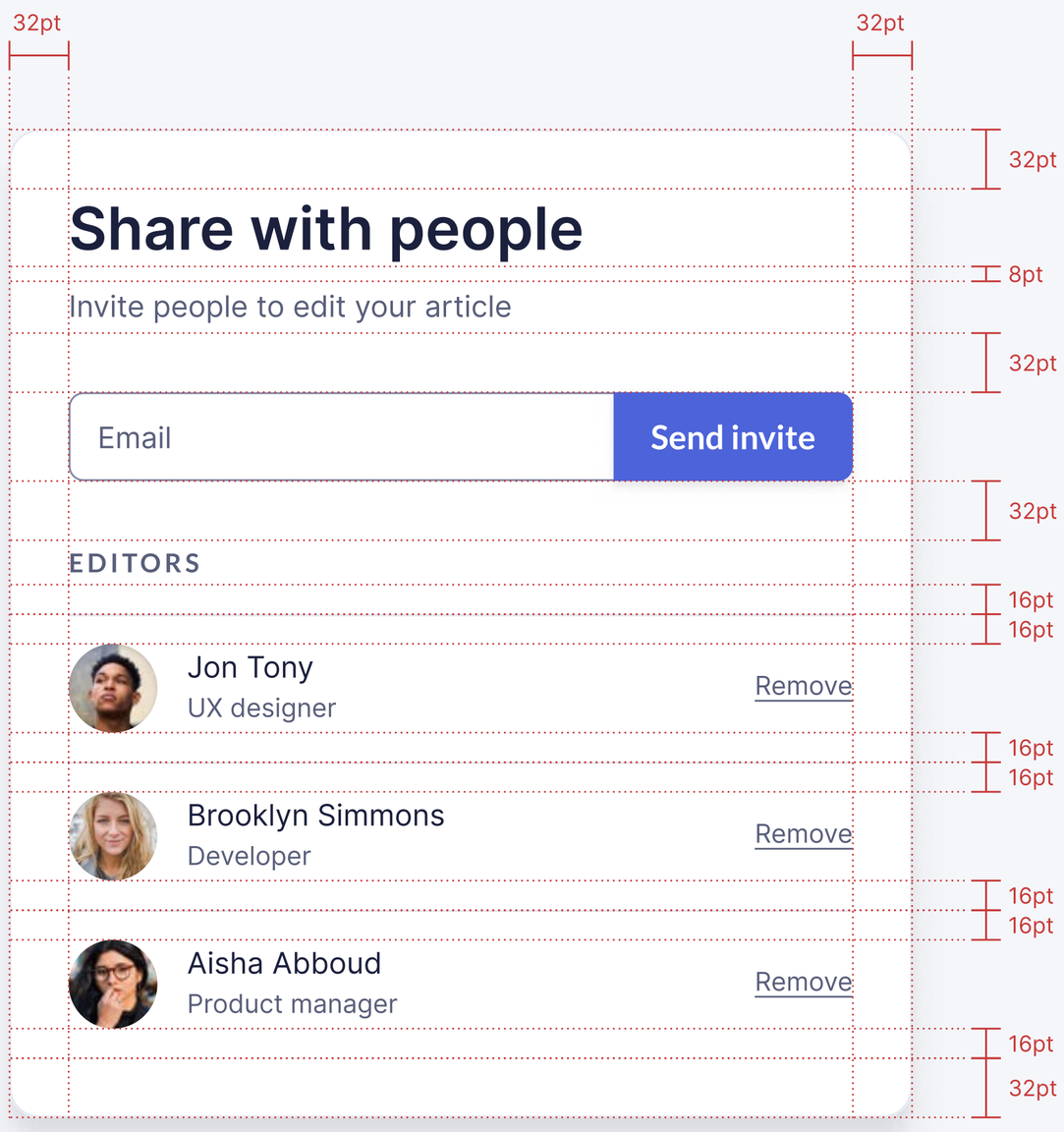
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Benefits of using a predefined set of spacing options:

- **Simplified designs** - as there's less variation between spacing.
- **Improved consistency** - as spacing across interface elements will match.
- **Design faster** - as there are fewer options to choose from.





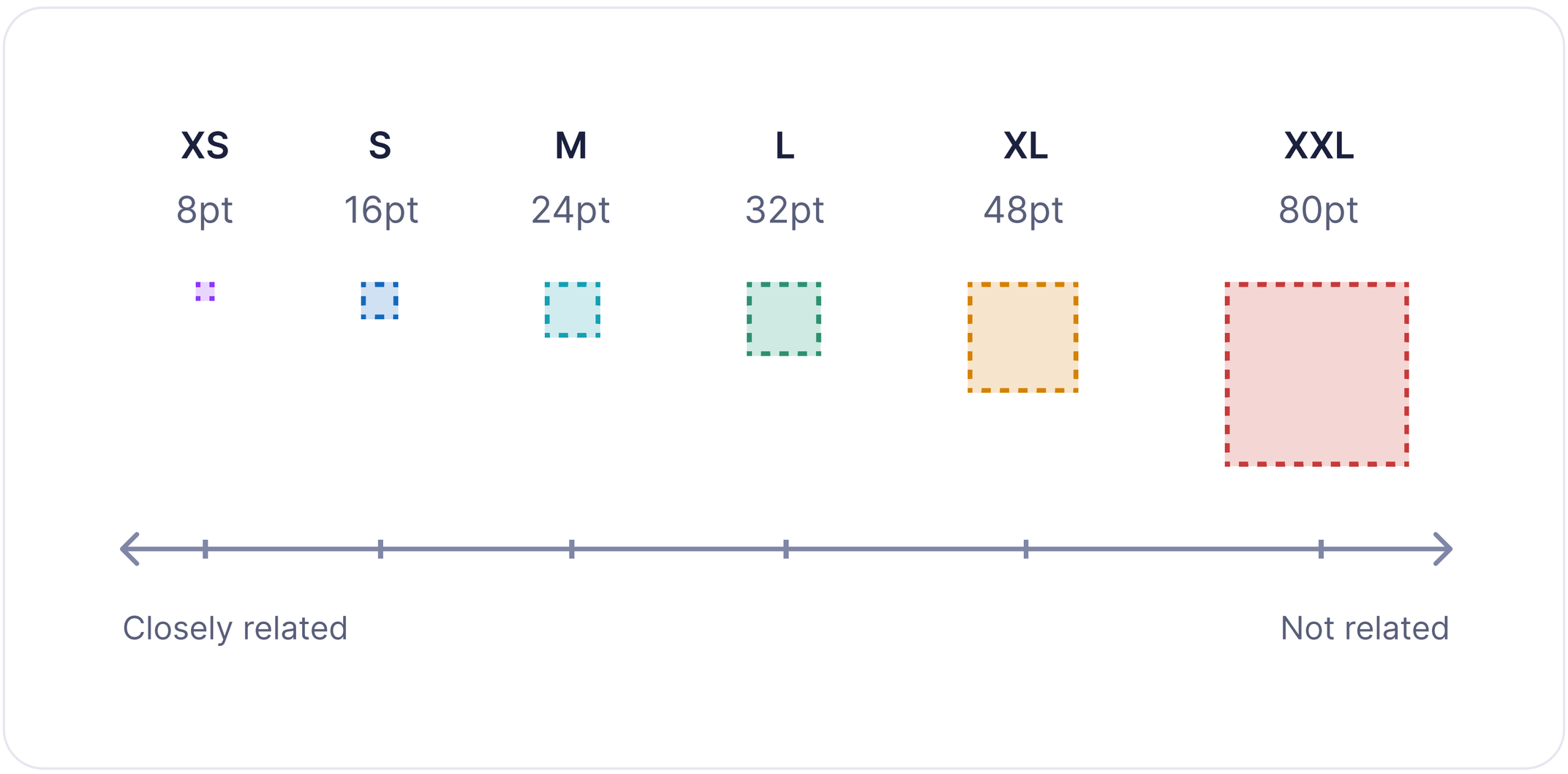


An example of an interface with inconsistent spacing versus one using a set of spacing options

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Space elements based on how closely related they are

It’s great that we have a set of predefined spacing options, but how do we know which spacing option to use? The amount of spacing between interface elements should depend on how closely related the elements are.



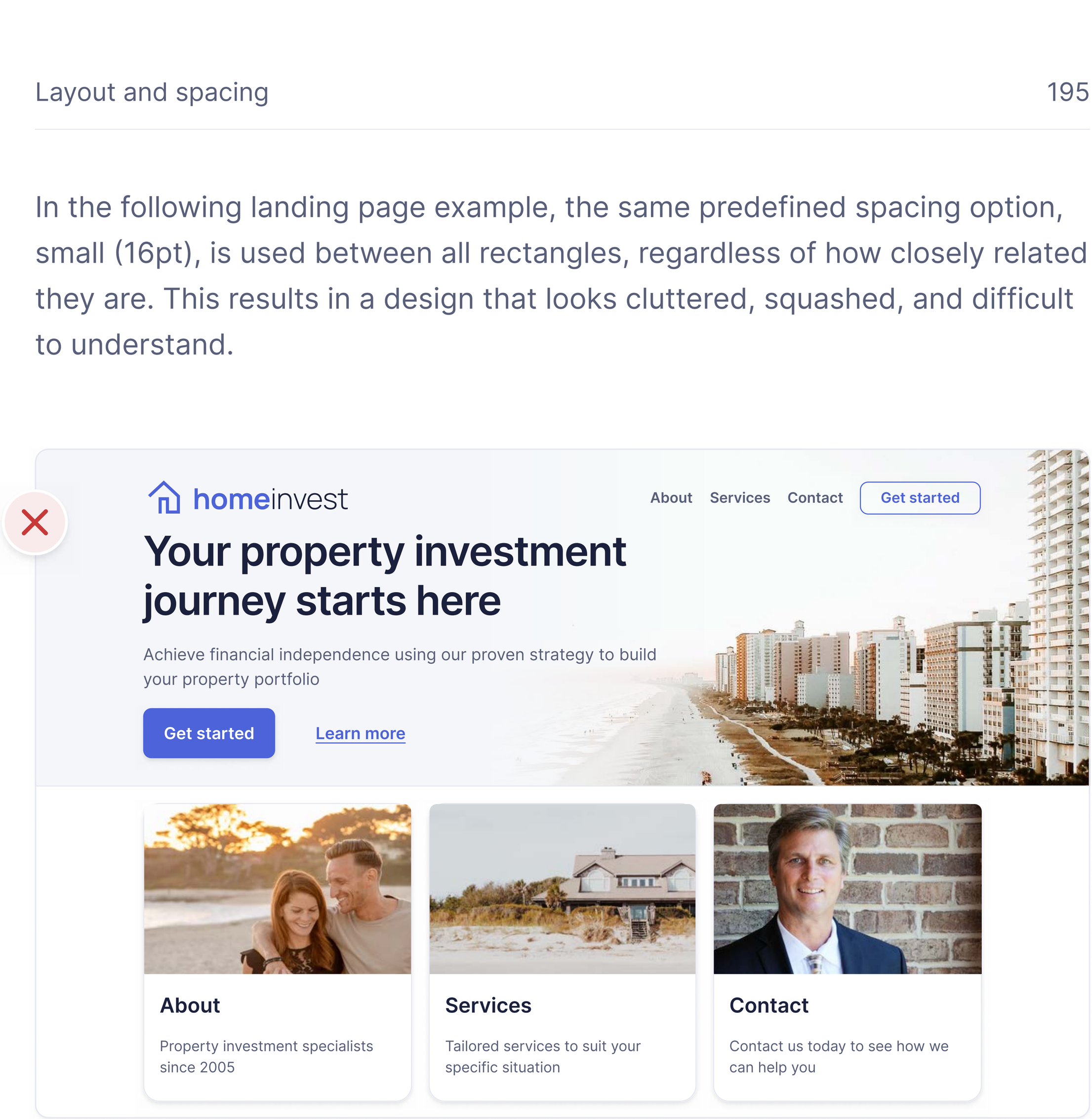
More closely related elements should generally be closer together to show that they’re related. Unrelated elements should be separated by placing more space between them.

Using spacing in this way is one of the most powerful methods of breaking up information into smaller groups. If you think of each group as a rectangle, you’ll start to notice that interfaces are made up of many small rectangles within larger ones.

Start by applying small spacing to the innermost rectangles and gradually increase the spacing between rectangles as you move outwards.

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In the following landing page example, the same predefined spacing option, small (16pt), is used between all rectangles, regardless of how closely related they are. This results in a design that looks cluttered, squashed, and difficult to understand.



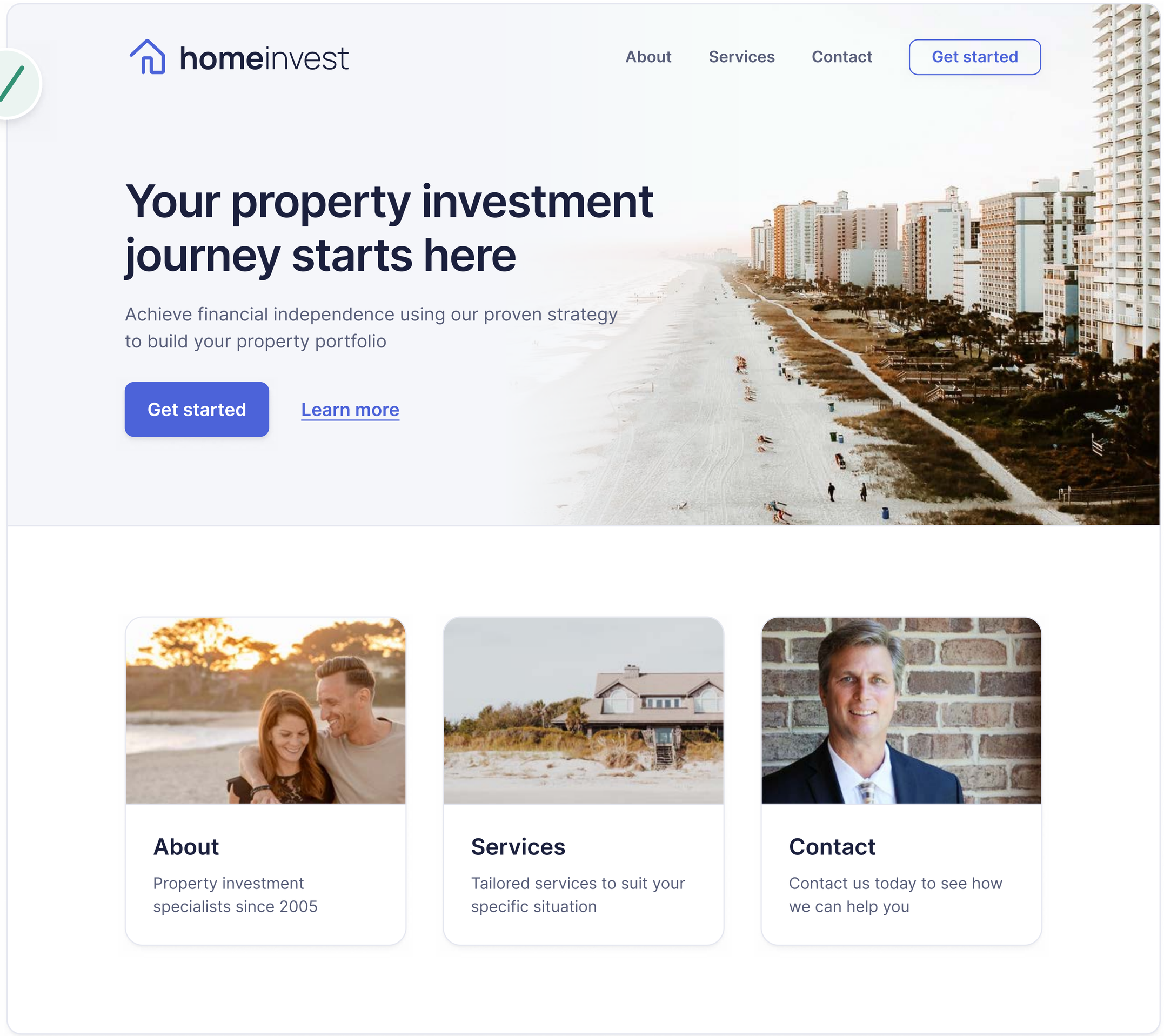
Landing page example with small spacing option applied everywhere

Let’s fix the spacing issues with this example. Firstly, break it up into rectangles within rectangles.

Start by applying extra small (8pt) spacing to the innermost rectangles and gradually increase the spacing between rectangles as you move outwards. We’ll go through this process in more detail soon.

This results in a design that’s clearer, neater, and easier to understand.

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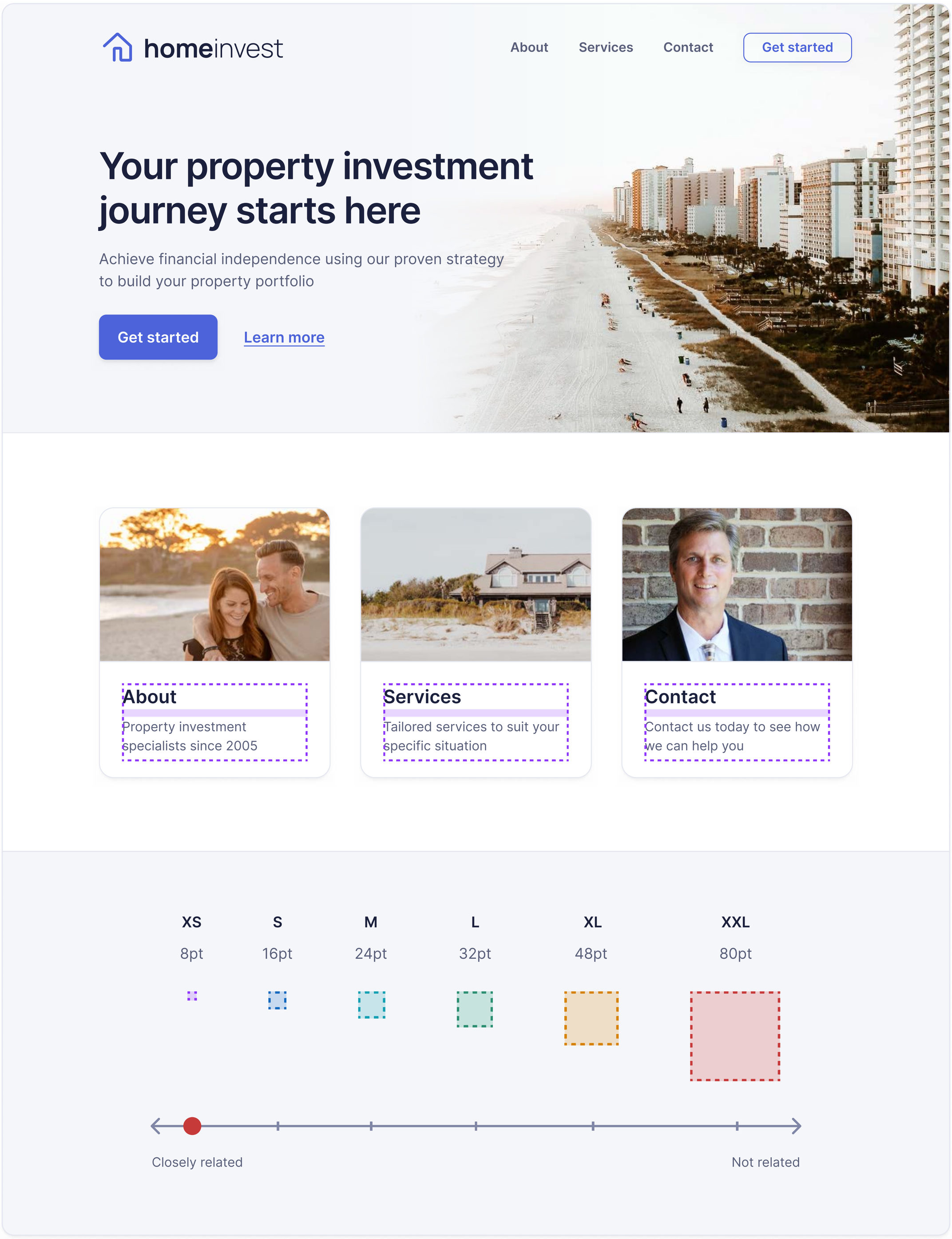
Landing page example with increasingly larger spacing options applied as you move outwards

Use spacing options consistently throughout your interface for improved order and rhythm. It’s a good idea to create spacing rules to help achieve better consistency and to speed up spacing decisions. For example, you might use the following spacing rules:

- Use medium (24pt) internal padding for components like cards
- Use large (32pt) gaps between columns
- Use extra extra large (80pt) vertical padding for website sections

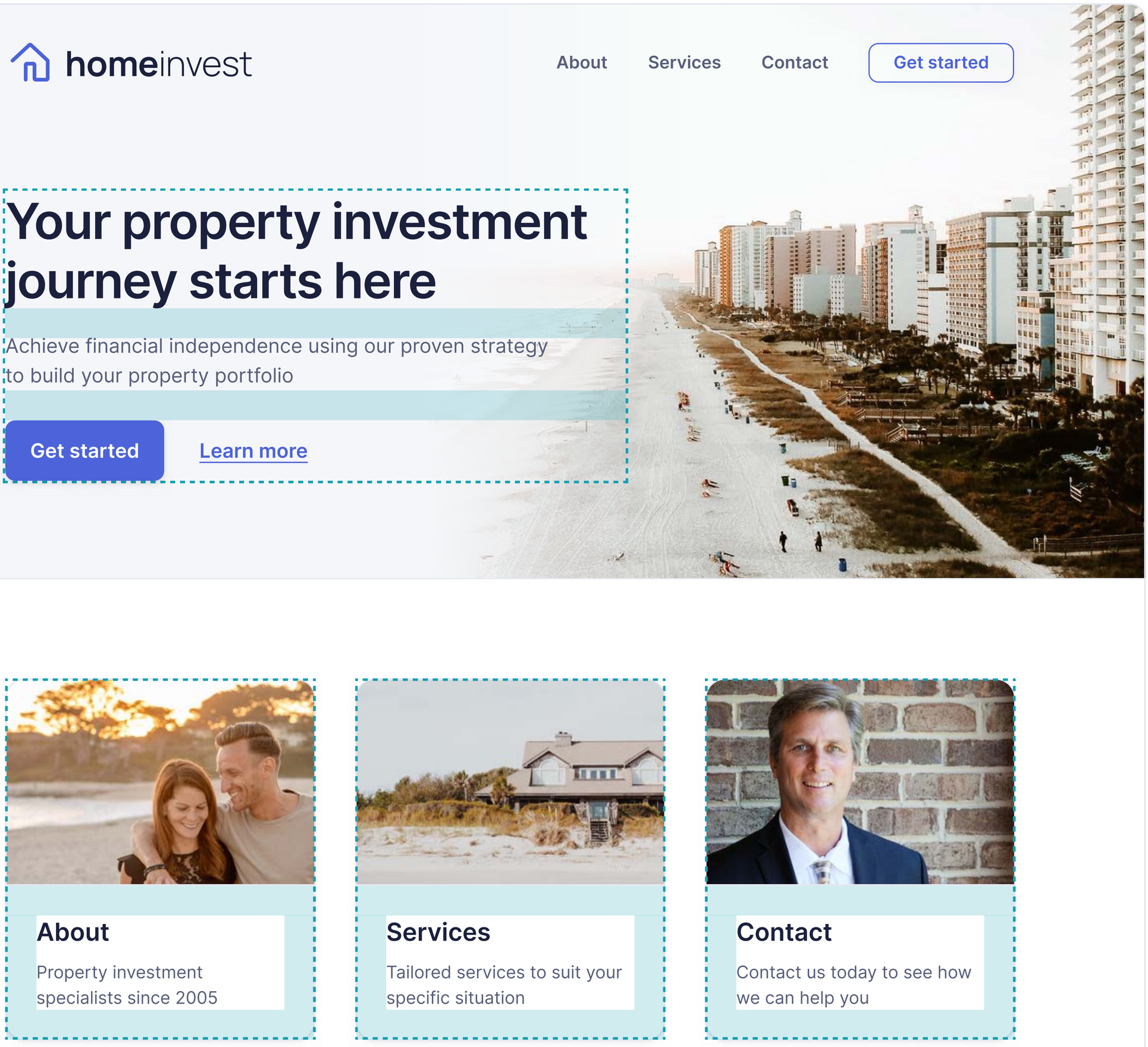
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Let’s look at the spacing options used in the improved example. Start with extra small (8pt) spacing for the innermost rectangles (the card text).



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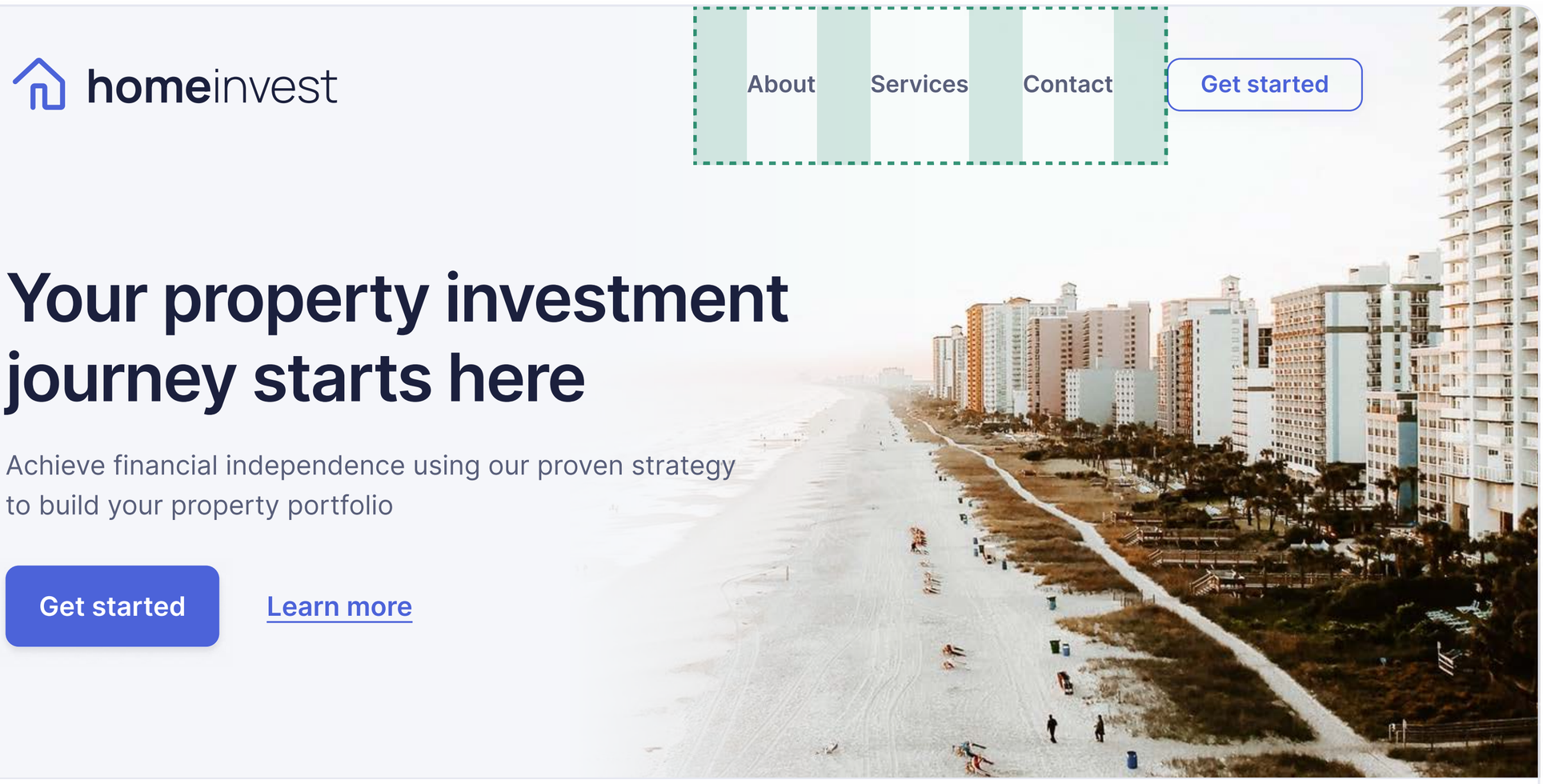
Moving outwards, increase the spacing to the medium (24pt) option for the next level of rectangles (the top section content and card padding). You could use the small (16pt) option, but more generous spacing makes it easier for people to distinguish interface elements.

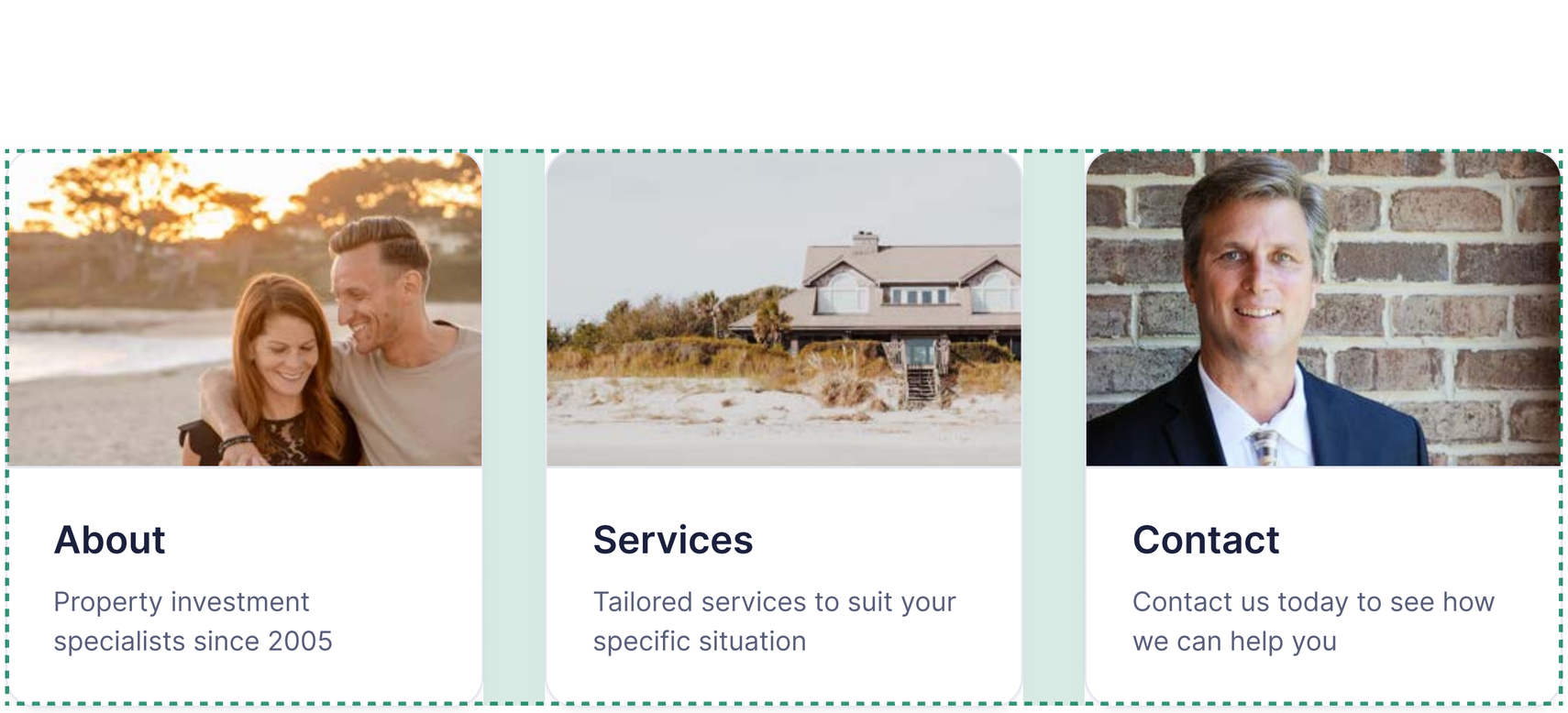




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Moving further outwards, apply the large (32pt) spacing option between top navigation links and cards. The cards are actually sitting on a 12 column grid which has gaps of 32pt between columns. You'll learn about grids soon.

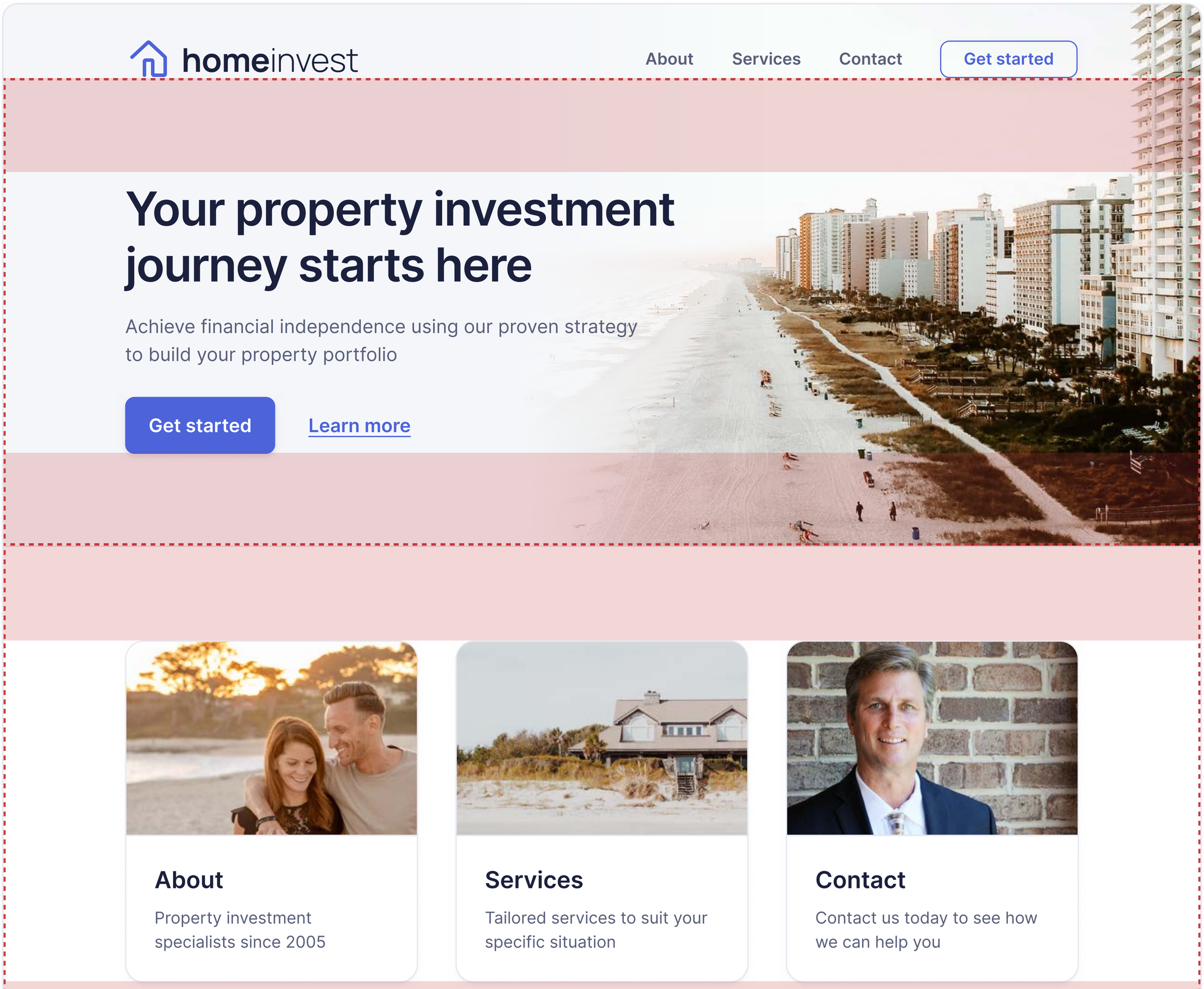






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For the outermost boxes of section content, apply the extra extra large (80pt) spacing option to help separate each section of content. Using this systematic spacing approach is a simple way to add order and structure to an interface design.

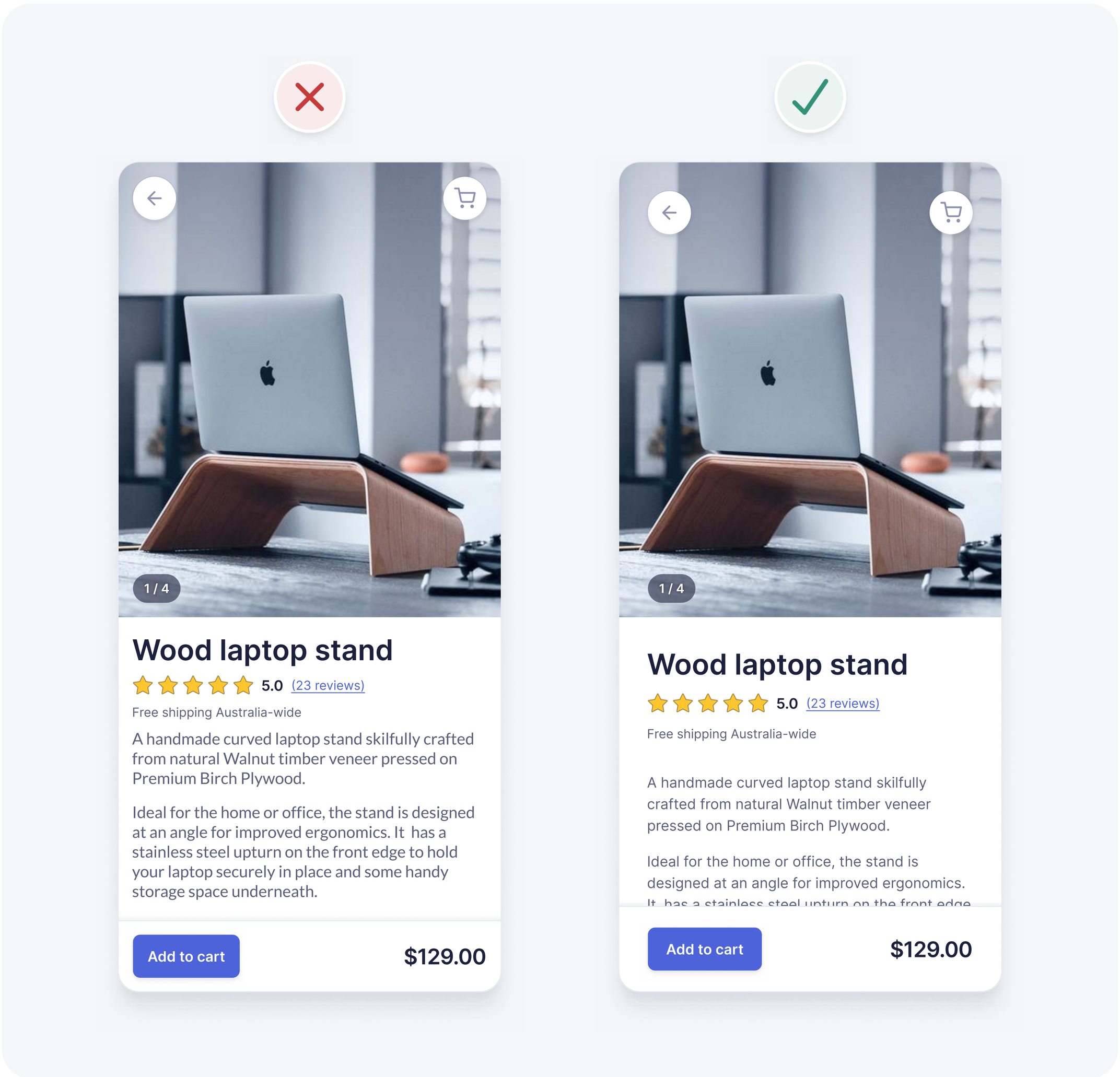




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Be generous with white space

One of the quickest and easiest ways to instantly improve an interface design is to use more spacing or white space. White space refers to the empty space between and around design elements. It can be padding, margins, or even the space between lines of text. White space isn't necessarily white, it can be a colour, pattern or image.

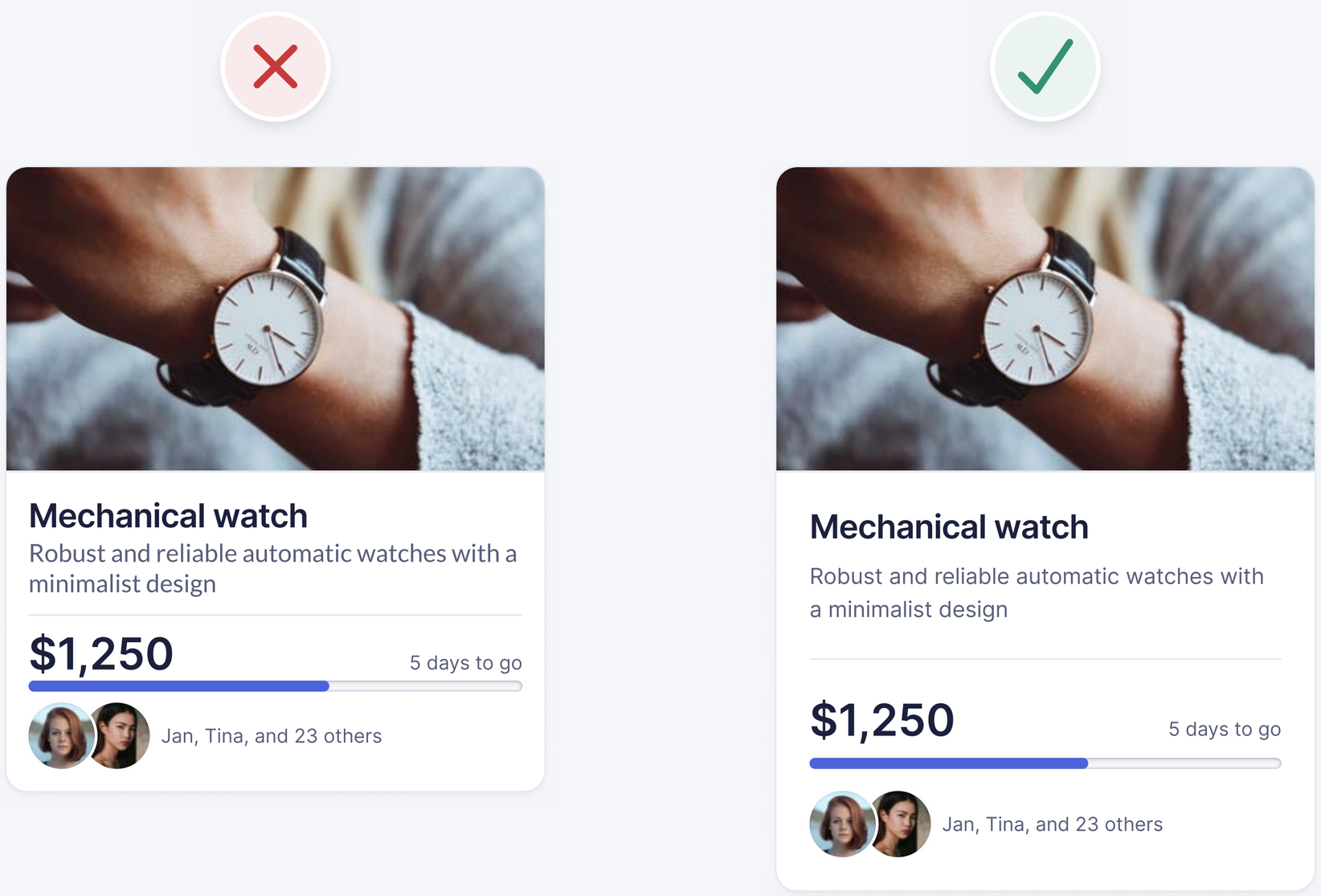


Example of an interface with tight spacing versus one with generous spacing

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Unfortunately, there’s no simple rule that tells you how much white space you should use. Using more white space is generally better than using less. Tight spacing makes it more difficult for people to see groupings and visual hierarchy. This makes it harder for them to understand the information. More white space can also make your interface design look simpler, cleaner, and more sophisticated.

When defining the space between design elements, try to be generous. For example, instead of using the extra small (8pt) predefined spacing option, consider using the next one up.



Example of an interface with tight spacing versus one with generous spacing

Use The Squint Test to test whether you have enough white space. If you squint or blur the interface and you can’t easily distinguish between elements, then you should probably increase spacing to be safe.

White space isn’t just leftover space, it’s an important design element that you can use to improve usability and aesthetics.

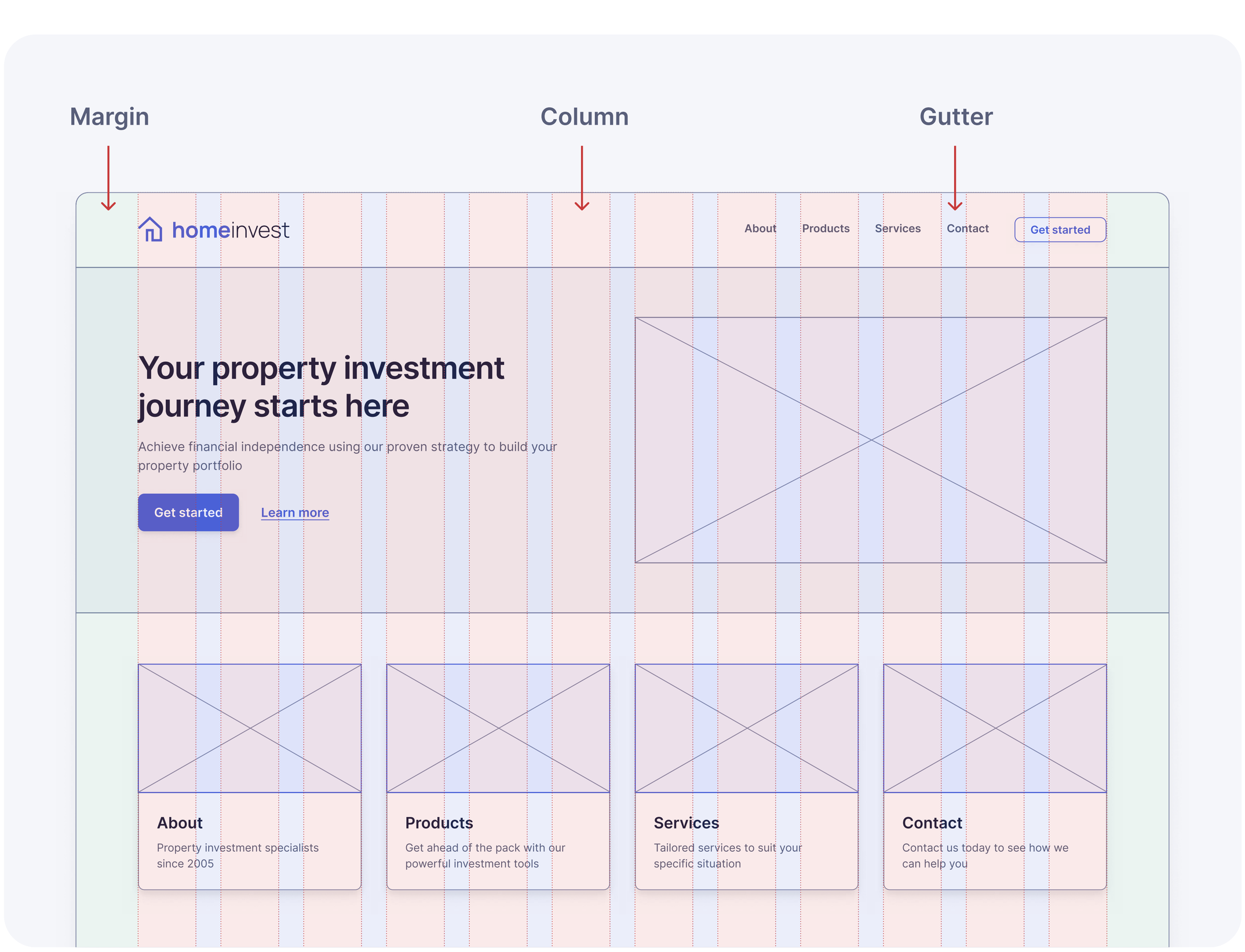
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Align the main layout to a 12 column grid

The more interface elements you align, the more ordered and structured your interface will appear. This reduces cognitive load and makes it easier for people to understand an interface. A quick and simple way to improve alignment is to use a 12 column grid.

What’s a 12 column grid?

A 12 column grid consists of 12 vertical columns separated by empty spaces called gutters. Outer margins prevent the content from hitting the left and right edges of a screen. Columns provide a structure for the layout of the main elements of an interface to align with.



12 column grid layout overlayed on a website

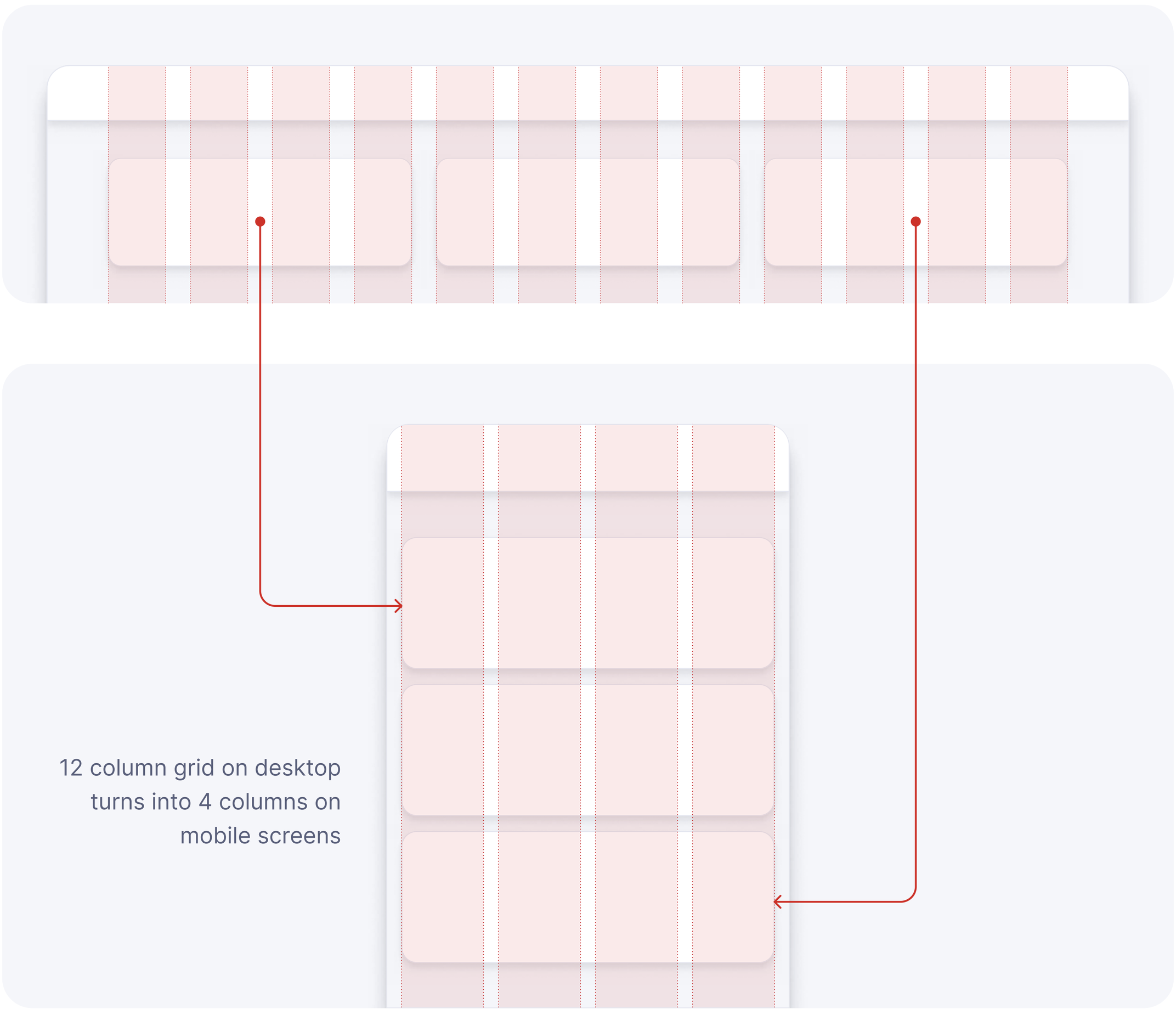
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Columns

Create different page layouts by aligning the main containers to one or more columns. Smaller elements inside the main layout containers don’t need to align to the 12 columns. Use your predefined spacing options for these smaller elements.

Columns generally have a flexible width, defined with percentages, rather than a fixed width. This allows them to adapt to different screen sizes. Start with 12 columns for large screen sizes, like desktops and laptops. Decrease the number of columns for smaller screens, like tablets and mobiles.

For example, on a large screen, 3 content cards might be aligned in a row across 12 columns. Each card spans 4 columns. On a smaller mobile screen, the cards stack on top of each other across 4 columns.



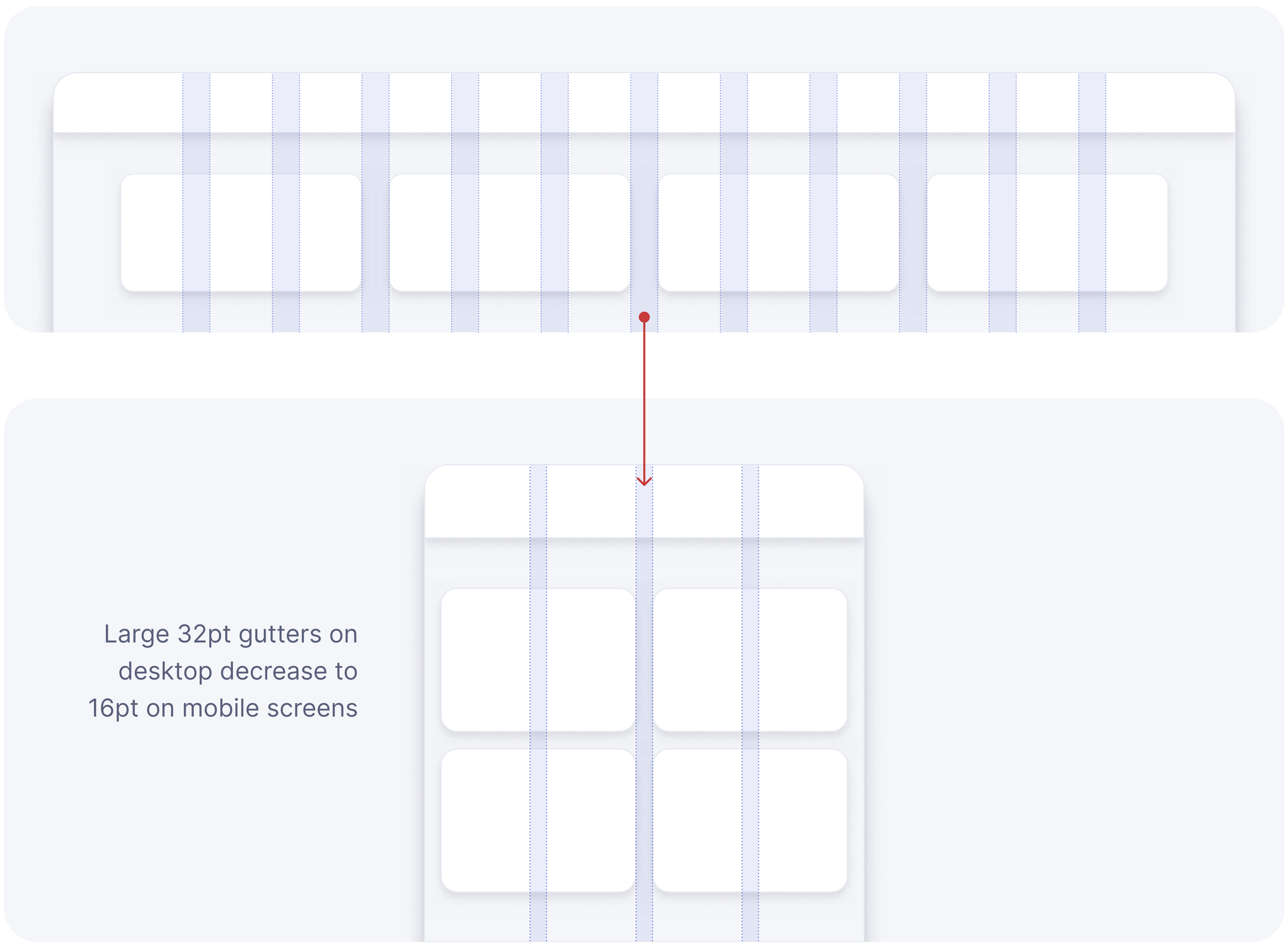
12 column grid on desktop turns into 4 columns on mobile screens

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Gutters

The purpose of gutters is to separate and align columns of content, not to contain content. Gutters should remain empty and should be narrower than columns. Gutters generally have a fixed width and are often wider on larger screens to keep spacing proportional.

For example, a large (32pt) predefined spacing option might be used for gutters on large screens, while a small (16pt) spacing option is used on smaller mobile screens.

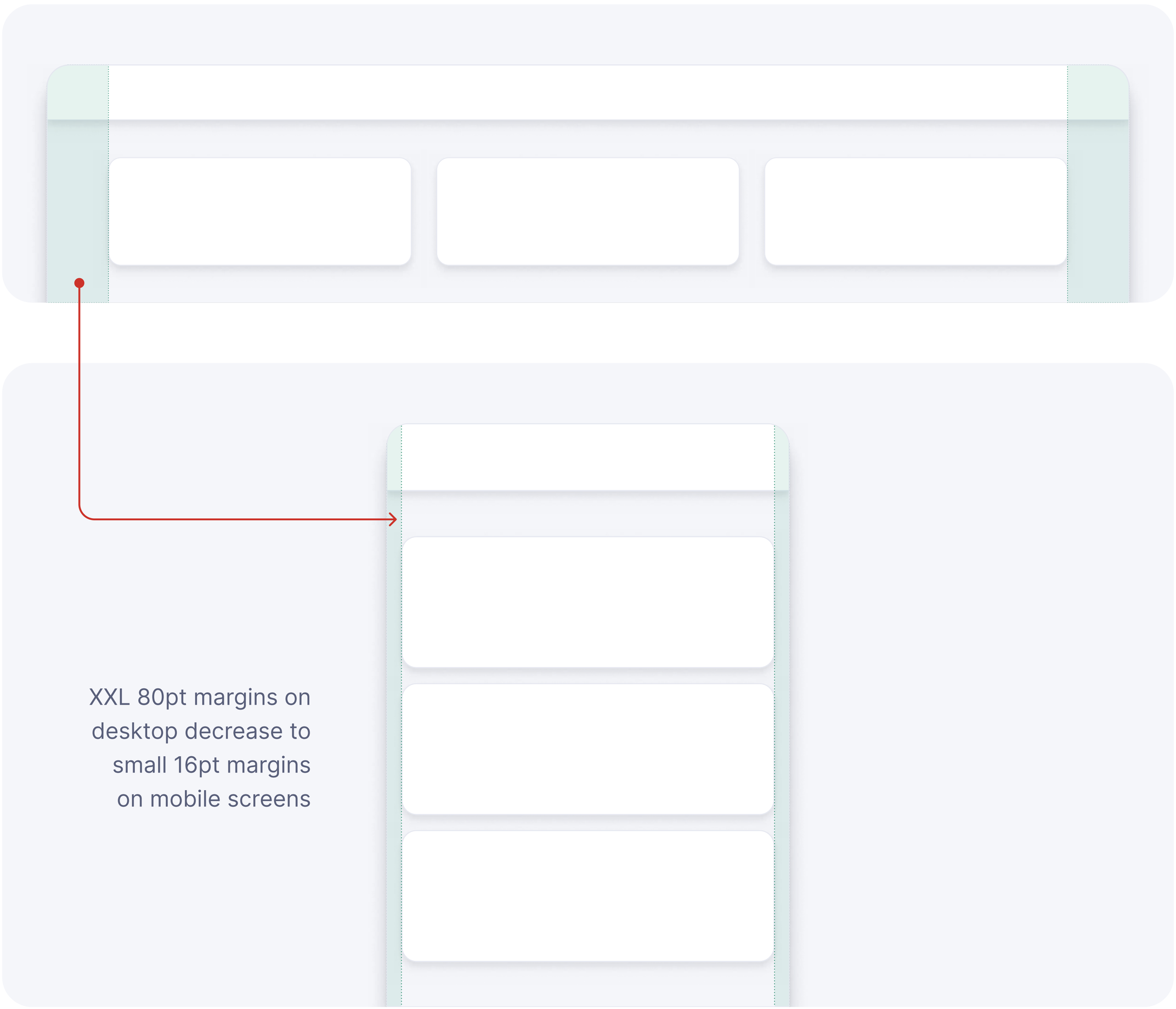


Large 32pt gutters on desktop decrease to 16pt on mobile screens

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Margins

Margins are the empty space on the left and right of the 12 columns. They prevent the content from hitting the left and right edges of a screen. Margins can have either a fixed or flexible width and are generally wider on larger screens.



XXL 80pt margins on desktop decrease to small 16pt margins on mobile screens

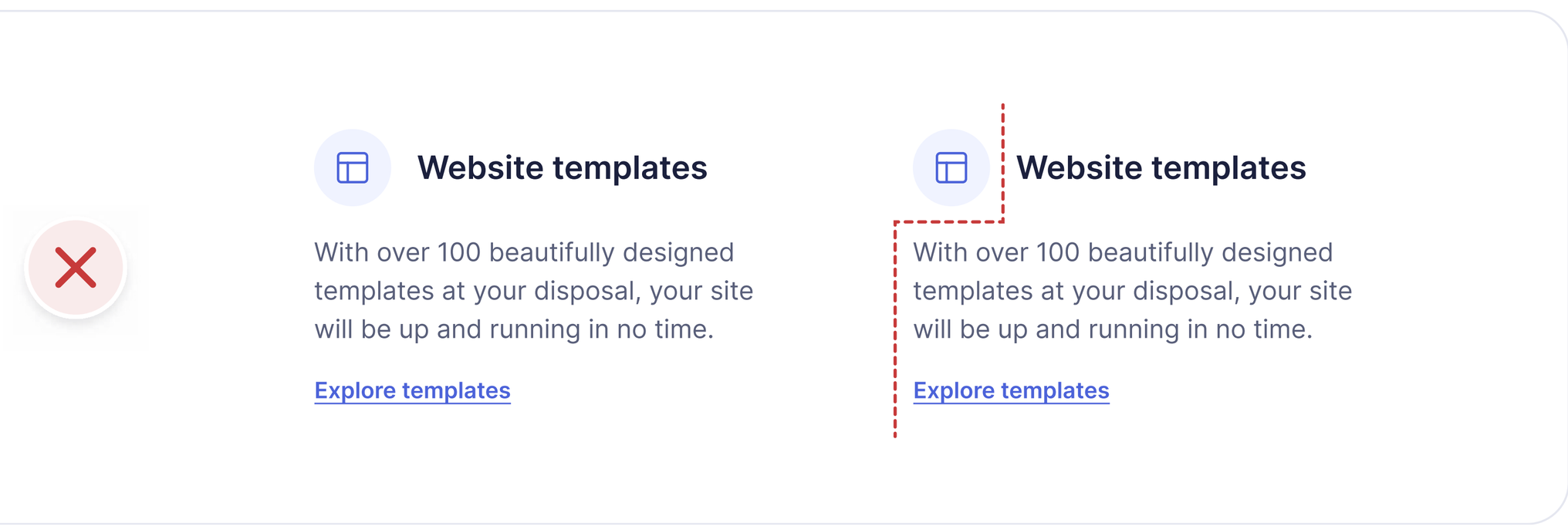
Some experienced designers find a 12 column grid restrictive, but when you’re learning UI design, having some restrictions can be helpful. Why 12? 12 columns is the most common, as it provides sufficient flexibility without being overly complex. It also aligns with most front end development frameworks. There are lots of online grid generators to help you experiment with spacing options for columns, gutters, and margins.

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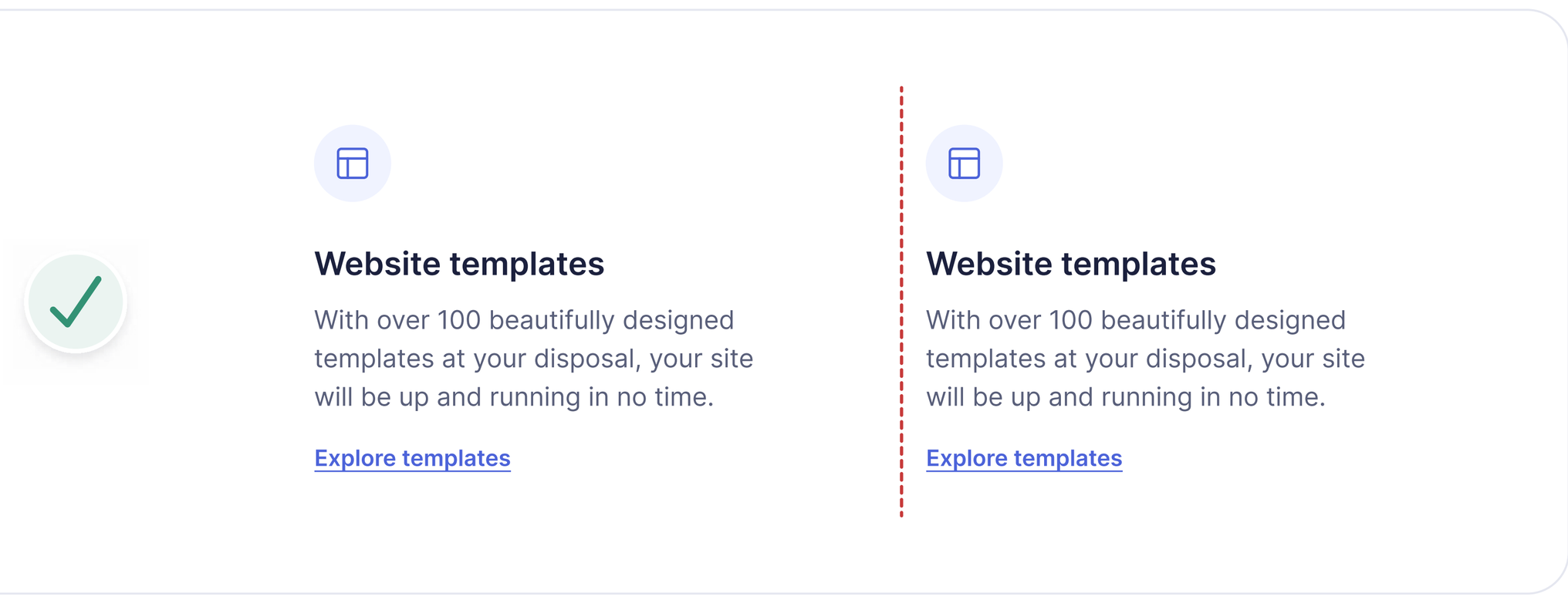
Align text to improve readability

Left aligned text is easiest to read because each line starts along the same straight left edge. This gives your eyes a consistent anchor to quickly jump back to at the end of each line. Try to maintain a straight left edge when aligning text with other interface elements like icons.

In the following example, the icon placement breaks the straight left edge. You can feel your eyes working slightly harder to go from the heading to the secondary text. This adds unnecessary cognitive load.



The following examples align text to a straight left edge, making it more comfortable to read. It’s literally easier on the eye, which makes it appear more neat and tidy.



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While centre aligning long blocks of text makes it harder to read, it can work well in moderation, for short blocks of text.





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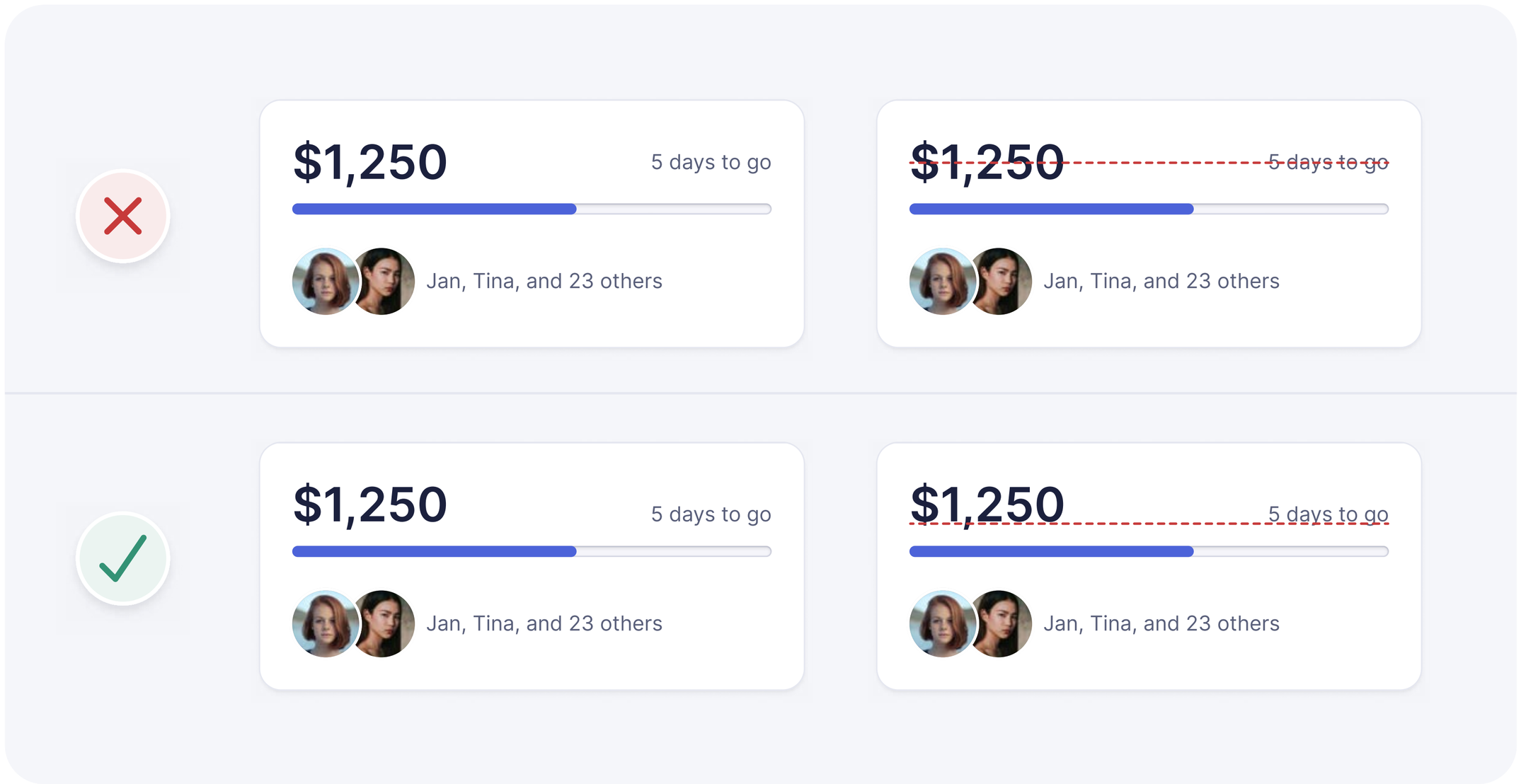
Align horizontal text to the baseline

The baseline is an invisible line that text sits on. It creates a relatively straight bottom edge that our eyes can easily follow.



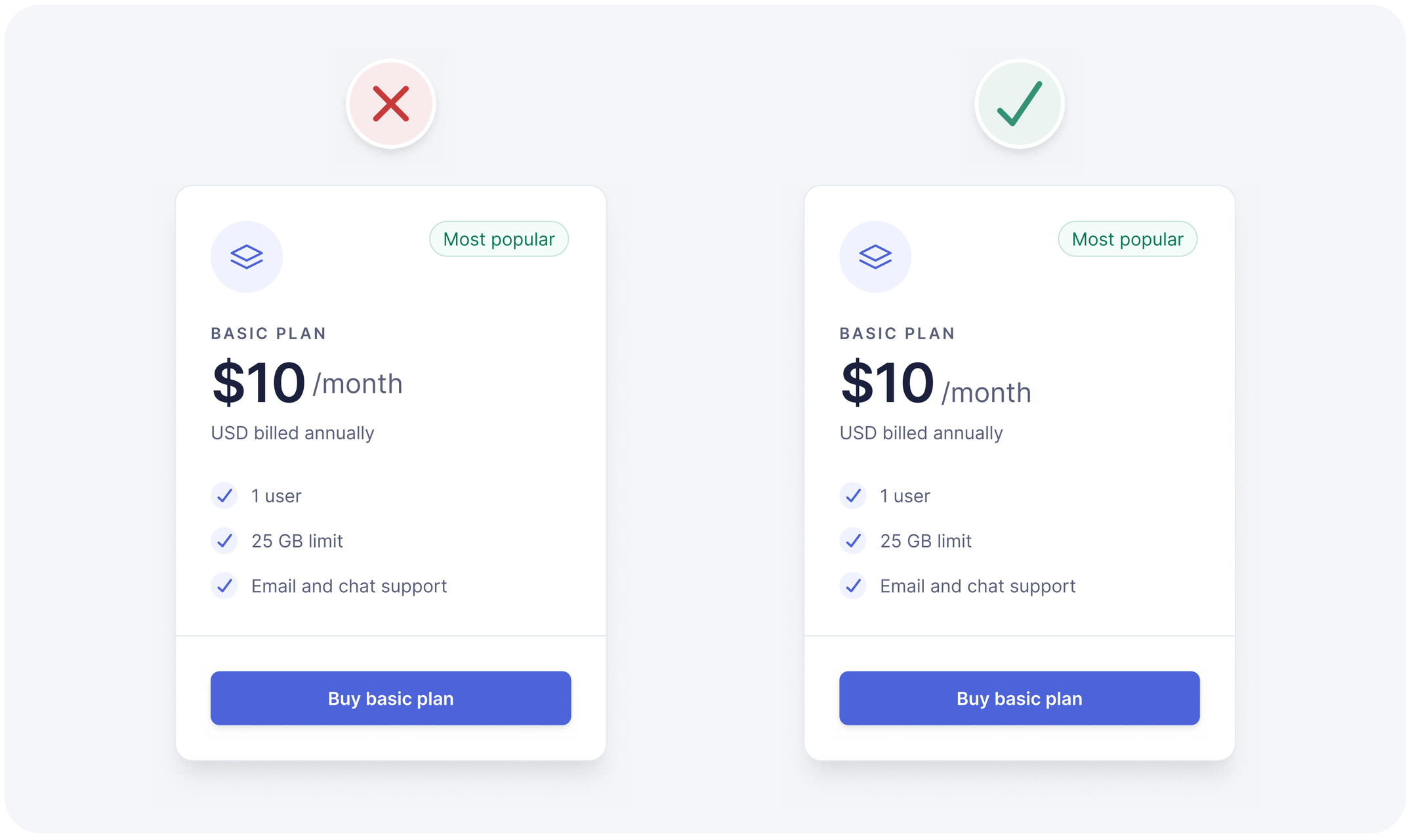
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When you have different sized text sitting in a horizontal line, align it to the baseline, rather than the vertical centre. This makes the text easier to read and also results in a neater looking design, as more elements are aligned.



Text aligned to vertical centre versus text aligned to the baseline

In the following example, the “/month” text is floating on its own when it’s vertically centred. Aligning it to the baseline neatly connects it to the price.



The “/month” text is aligned to the vertical centre versus the baseline

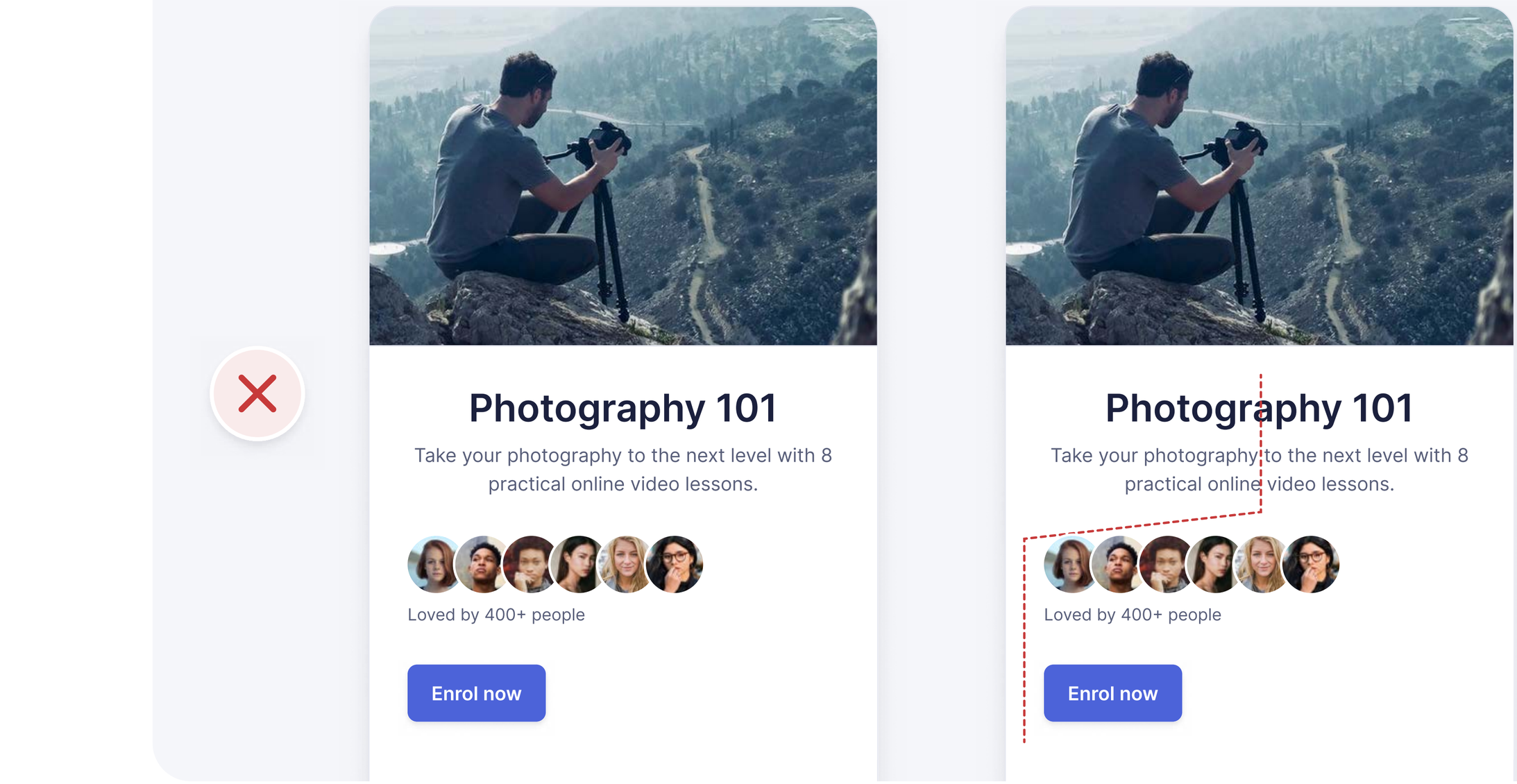
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Try to avoid using multiple alignments

The more different types of alignment you use (left, right, or centre), the more complex and messy an interface can look. Our eyes are forced to work harder as they move around to try and follow each alignment. This is highlighted when multiple different alignments are used within a small component or section of an interface.

Sticking with a single alignment (or as few as possible) helps to simplify an interface, making it look neater and tidier.

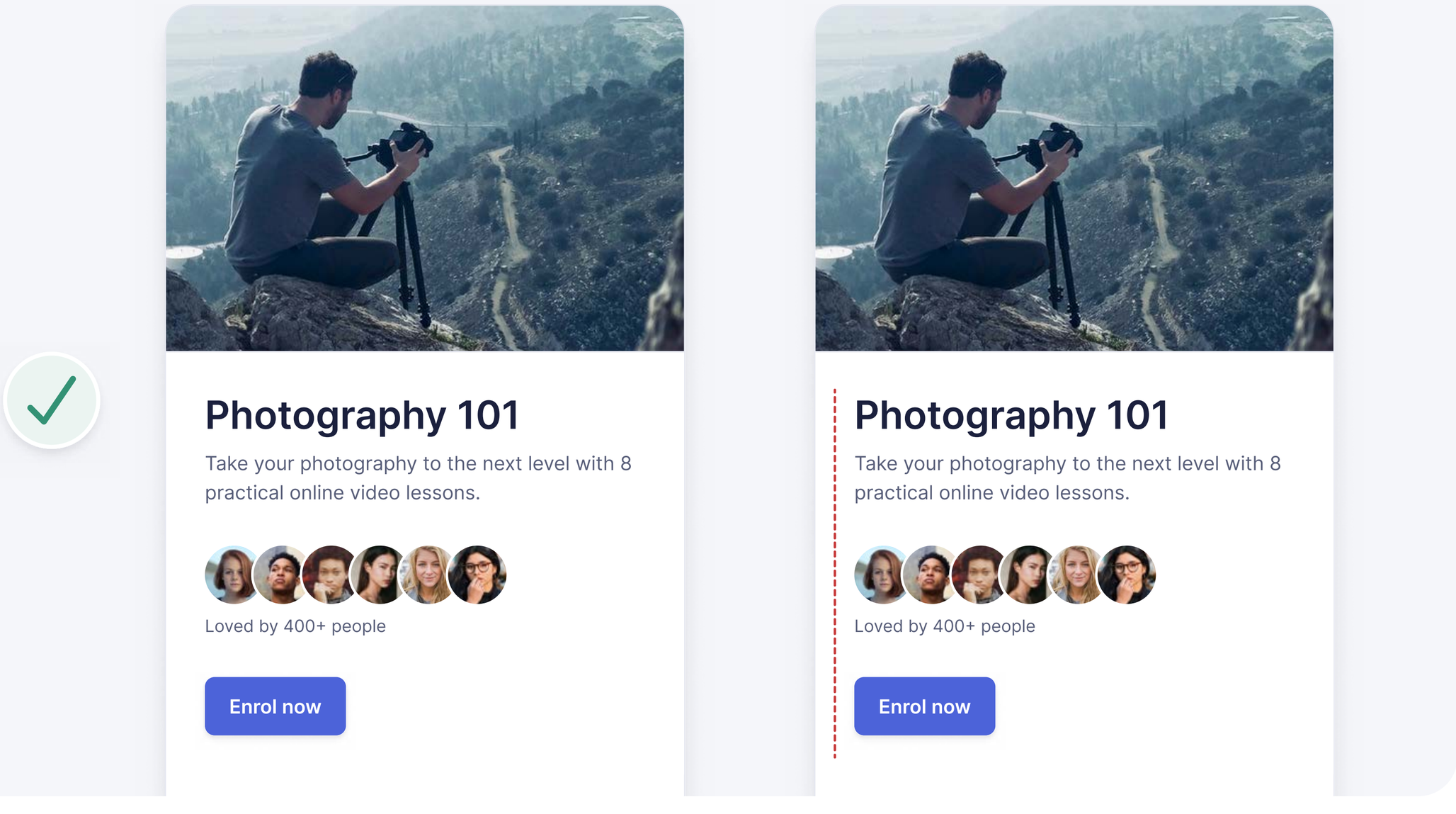
The following example starts with centre aligned text, then changes to left alignment for the other elements. The mixture of alignments adds unnecessary complexity, resulting in a slightly increased cognitive load and a less tidy interface.



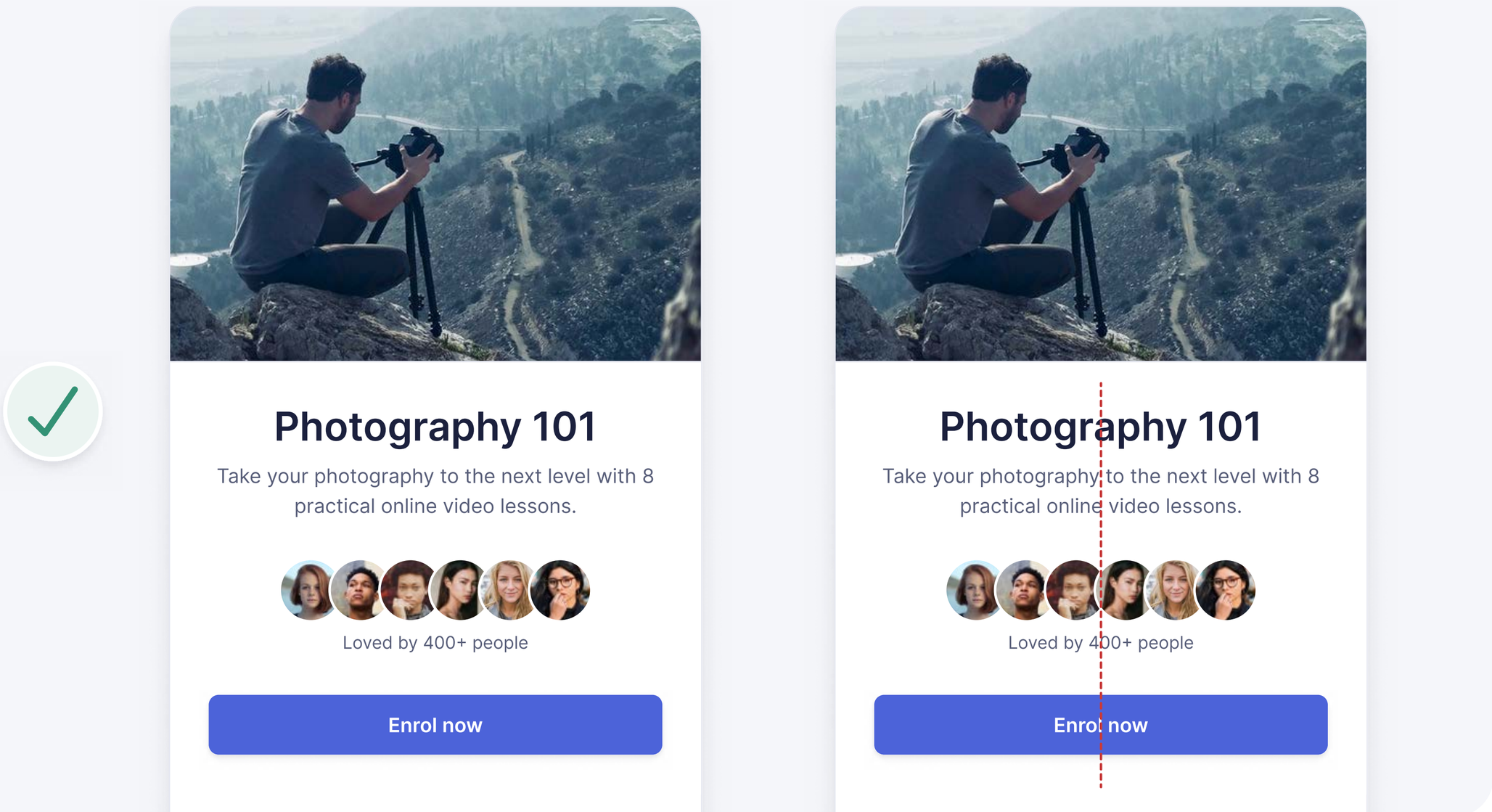
Example of an interface with multiple alignments

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It’s simpler and neater to left align all interface elements. The straight left edge also improves readability.



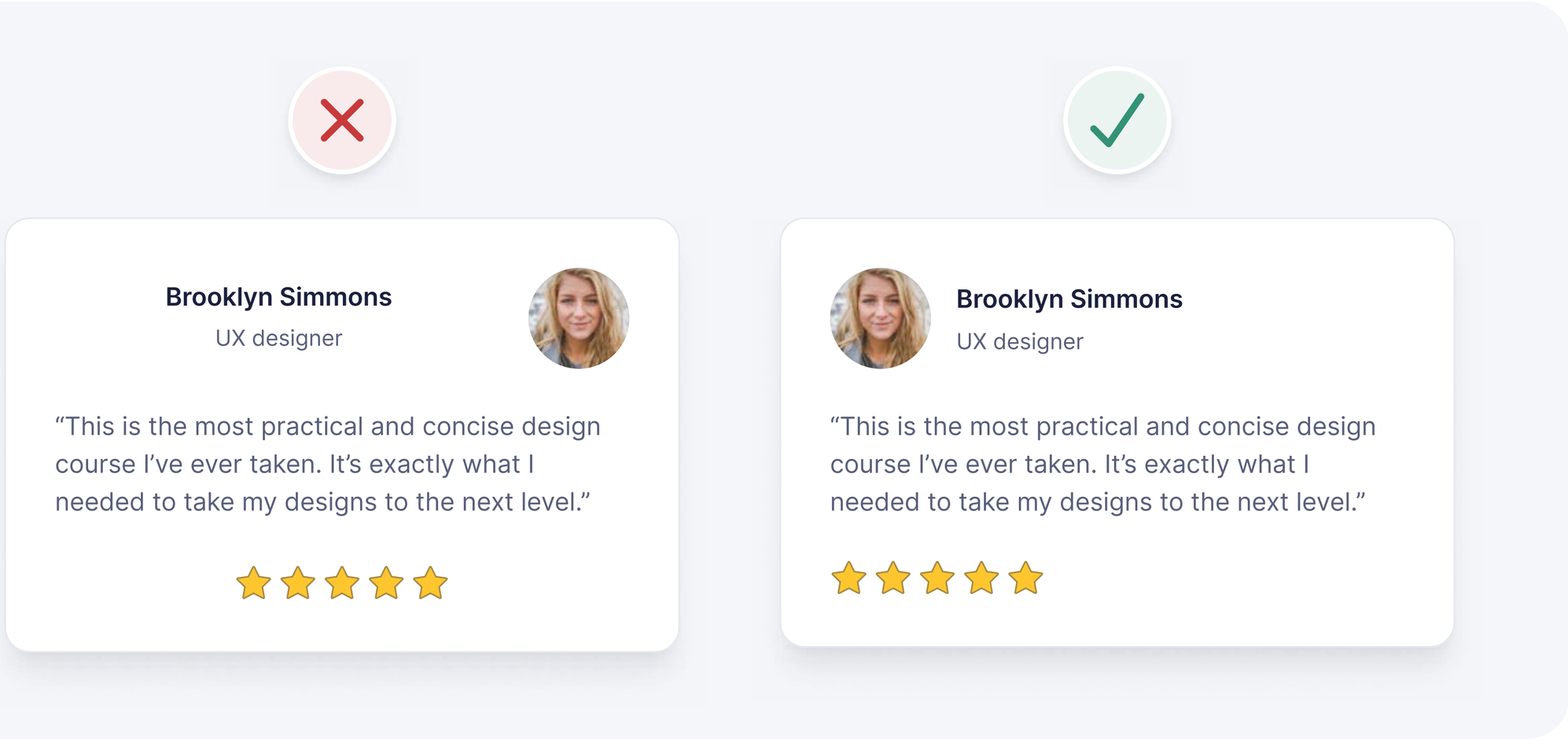
Since there’s only a small amount of text, you could also centre align all elements. Make the button full-width to help both left and right handed users easily reach it with one hand.



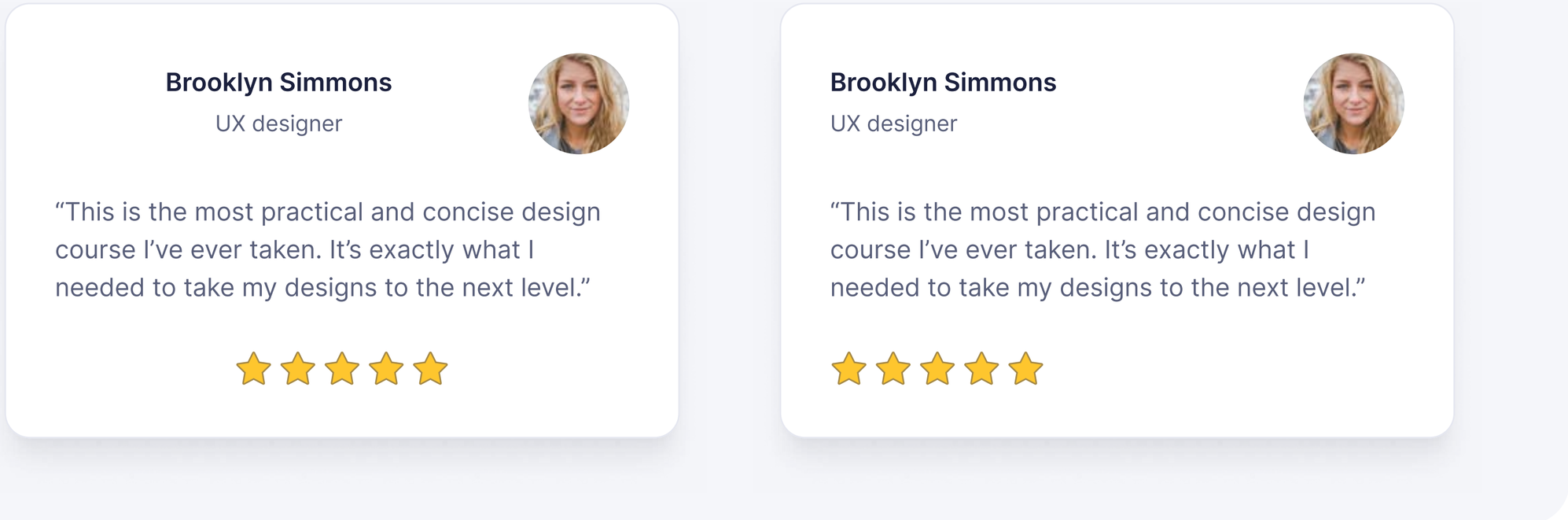
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Here’s another example that demonstrates how using fewer alignments can help simplify an interface. The person’s name and role are centre aligned, their photo is right aligned, the quoted text is left aligned, and the stars are centre aligned. You can feel your eyes zig-zag as you view the information and it looks untidy.

Aligning the majority of elements to the left is simpler and neater.



You could also improve readability by aligning all text to the left edge. The right aligned photo is ok, as the majority of elements have 1 alignment.



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Keep related actions close

According to Fitts's Law, the closer and larger a target, the faster it is for someone to select the target. This simple concept is often forgotten.

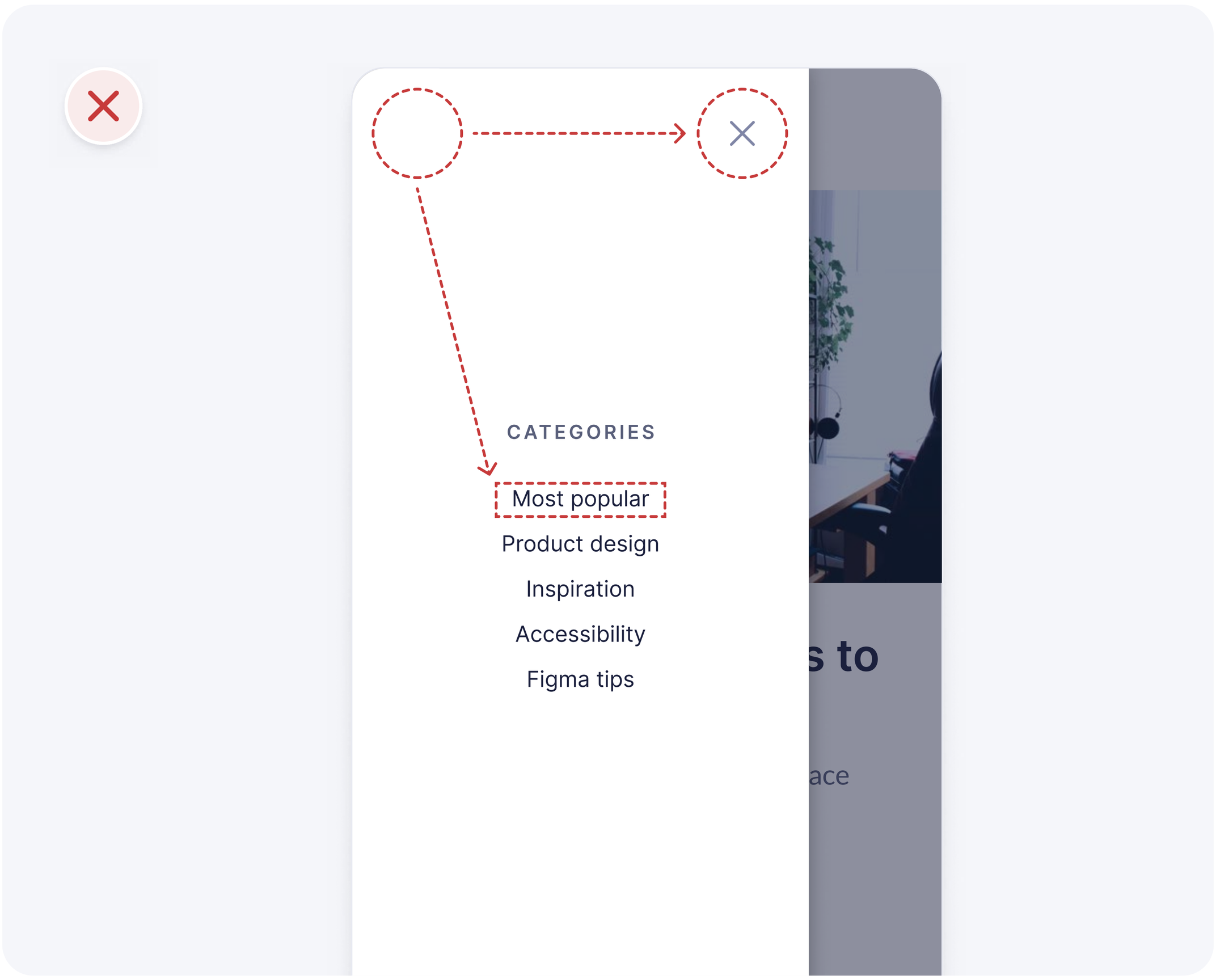
Reduce interaction cost by keeping actions close to the element they relate to. Try to ensure they have a sufficient target area. At least 48pt by 48pt is a safe size.

In the following example of a blog, we'll use Fitts's Law to help reduce interaction cost. Let's say that you want to navigate to the "Most popular" category by tapping on the menu icon in the top left.



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When you tap on the menu icon, a category menu slides out from the left.



Relatively high interaction cost to navigate to a category or close the menu

The category list is placed in the middle of the screen for aesthetic reasons, but it’s quite far from the initial tap position in the top left. The close button is also relatively far from the initial tap position. This causes you to spend slightly more time and effort navigating to a category or closing the menu.

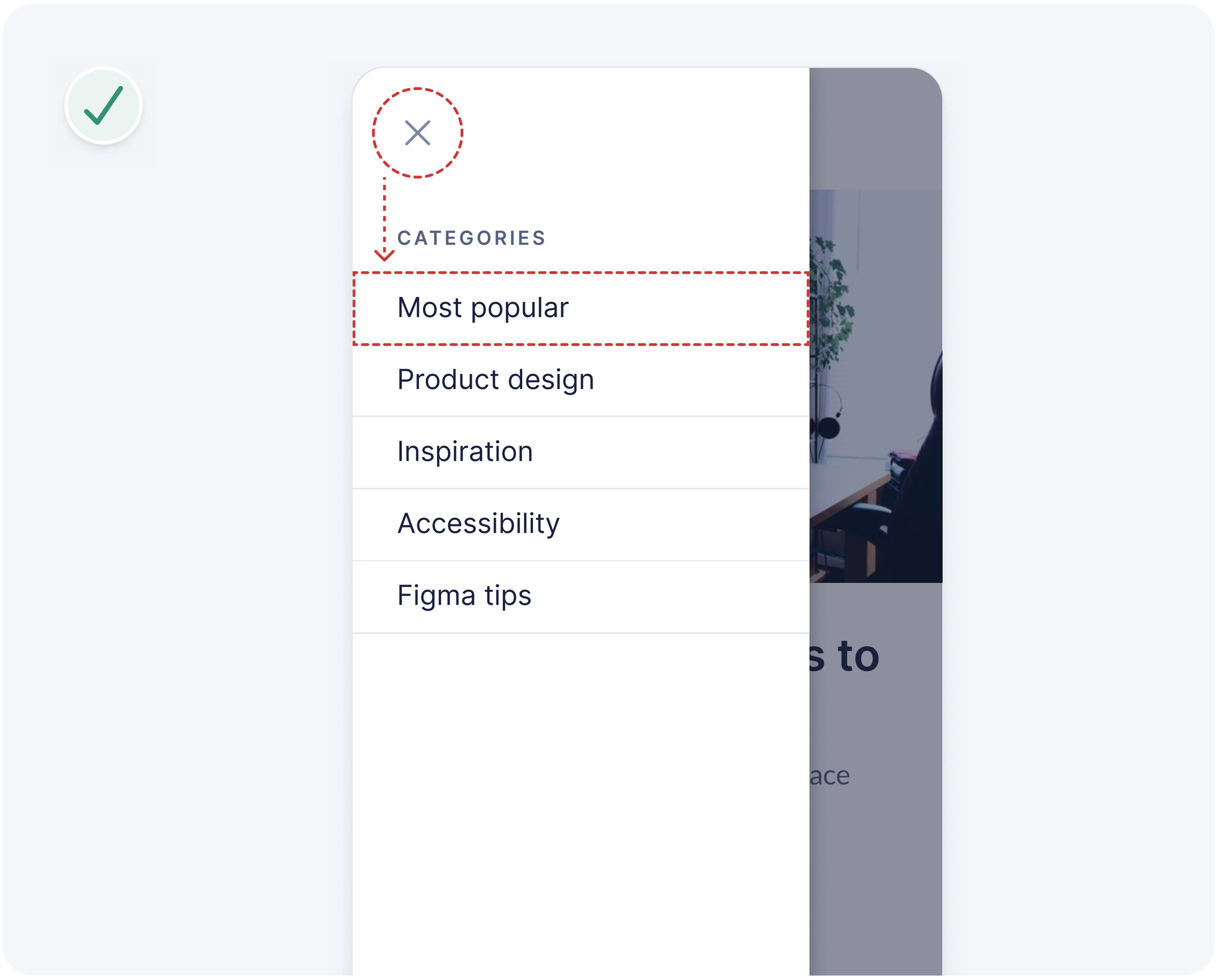
The size and tap area of the category menu items are also relatively small, which means you need to be more precise when tapping them. Again, this takes more time and effort which increases interaction cost.

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Let’s quickly redesign this slide out menu to accommodate Fitts's Law:

- Move the close button to the start position, so that people don’t need to move their finger position to open and close the menu.
- Move the category menu to the top, left align the text, and increase the size of the menu items to make them faster and easier to tap.
- Add a border around the menu items to clearly indicate the large target area. This is so people don’t need to be so precise when tapping on a menu item, and can do so faster and more easily.

This is a relatively small saving to interaction cost, but many small savings can quickly add up, especially when interactions are repeated.

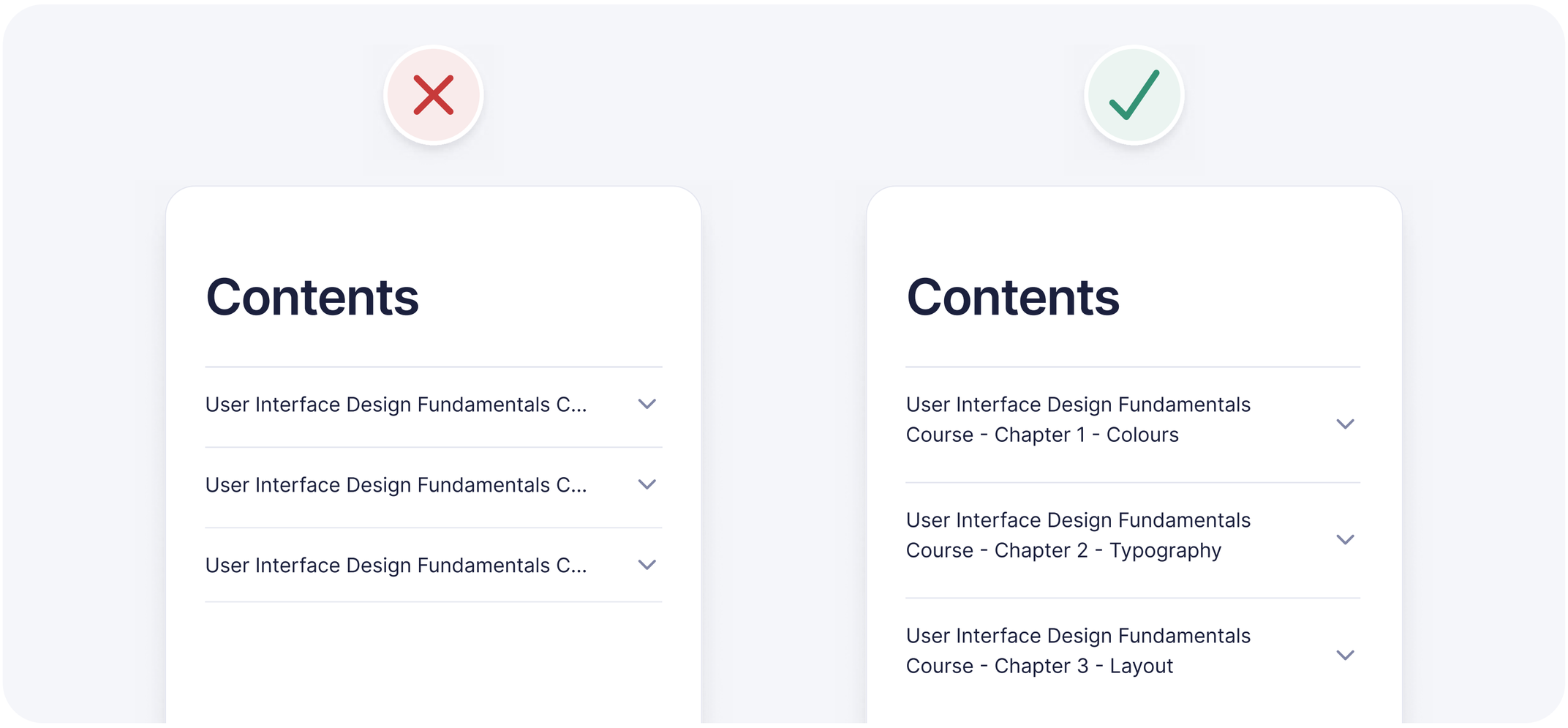


Lower interaction cost to navigate to a category or close the menu

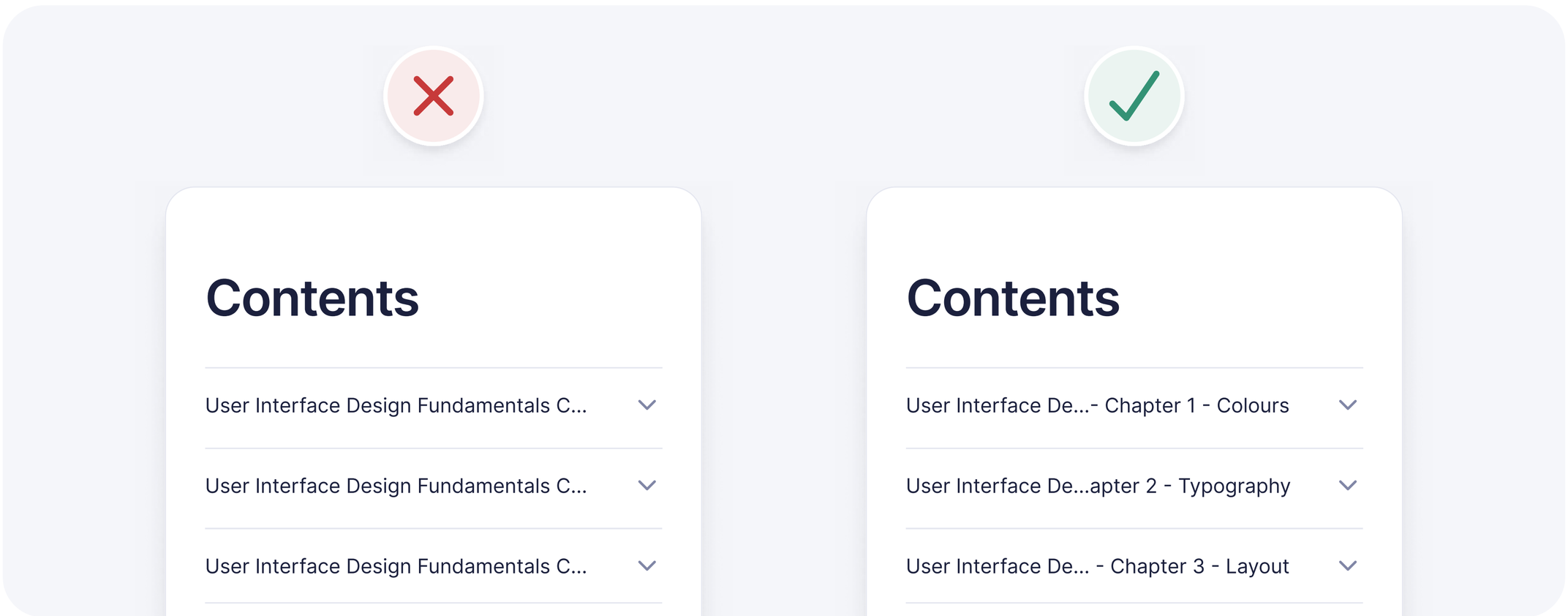
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Ensure an interface is unbreakable

Don’t just design an interface for small numbers and short text. Make sure it can accommodate long data and edge cases (uncommon cases) too. Try to avoid hiding data that overflows, as you could be hiding essential information. Instead, keep your components flexible to allow for reflow of content, or decrease font sizes to allow for long data.



If you need to hide data due to space constraints, try to ensure that you’re not hiding essential information. For example, consider cropping text in the middle, rather than at the end, so that people can differentiate items.

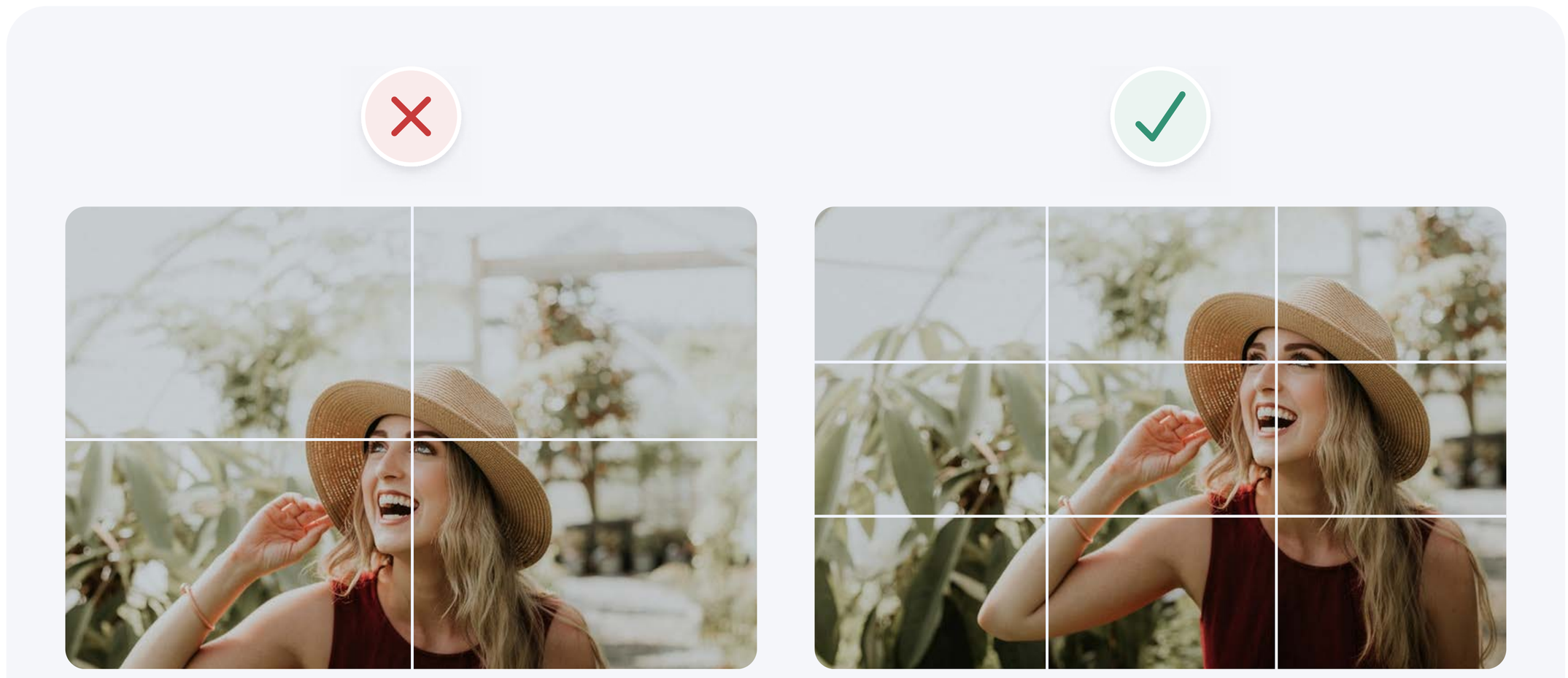


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Use the Rule of Thirds for photos

The Rule of Thirds is a simple but effective way to make photos look more balanced, natural, and dynamic. Let’s learn how to use it.

Divide your photo into thirds by creating a grid that’s 3 columns wide and 3 rows tall. This creates 4 focal points where the lines intersect. Our eyes naturally gravitate towards these focal points. Try to roughly align key elements of your photo to the grid, ensuring that the main subject sits on one of the 4 focal points.



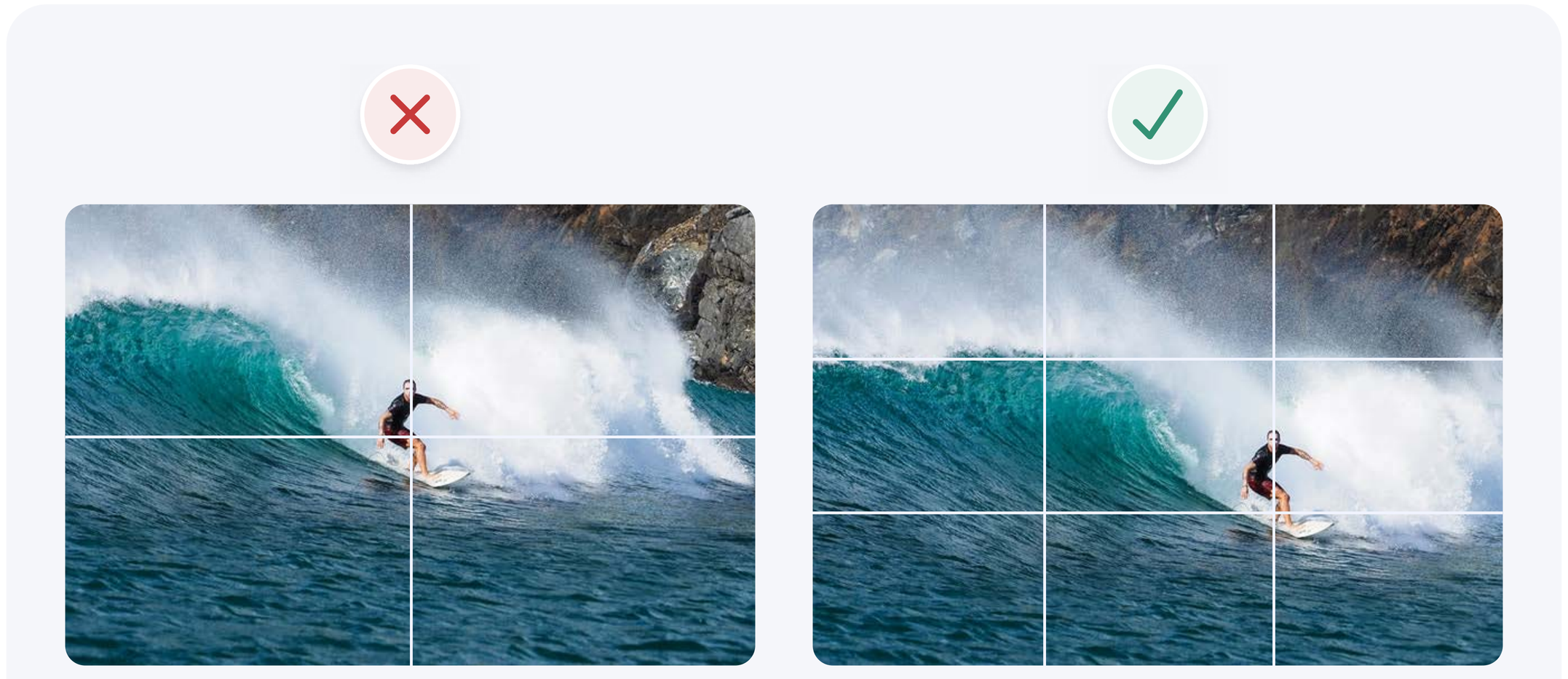
Centre alignment versus alignment using the Rule of Thirds

In this example, the focal point is the person’s eyes. If you simply position their eyes in the centre of the photo, you end up with a very symmetrical photo that looks a bit rigid and still.

If you move their eyes to align with one of the 4 focal points on the grid, the asymmetry introduces a sense of natural motion and flow.

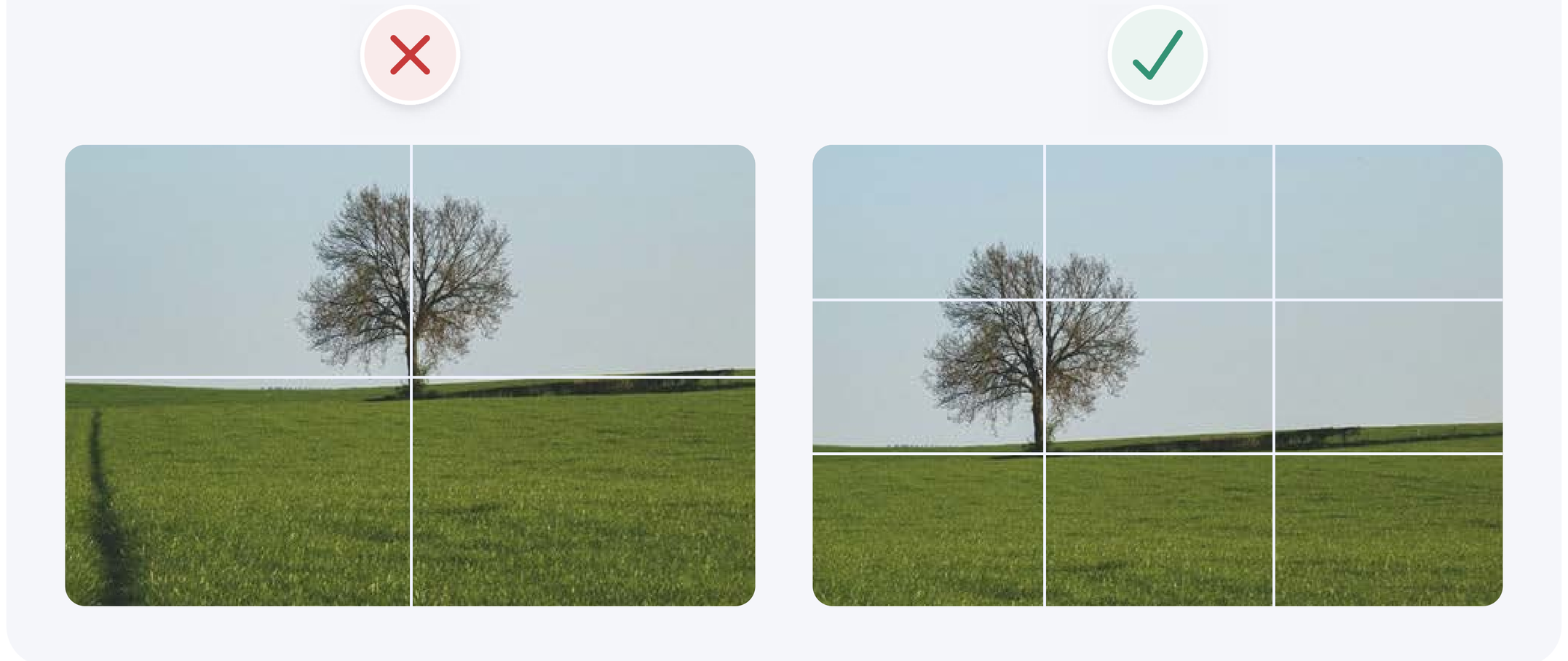
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The Rule of Thirds is especially effective for action shots, as it increases the sense of motion already present in the photo. In the following photo, align the surfer to a focal point and ensure that the top of the wave aligns with the horizontal grid.



Centre alignment versus alignment using the Rule of Thirds

Similarly, the following photo of a tree in a field feels more natural by using the Rule of Thirds. Align the tree to a focal point and ensure that the landscape aligns with the horizontal grid.



Centre alignment versus alignment using the Rule of Thirds

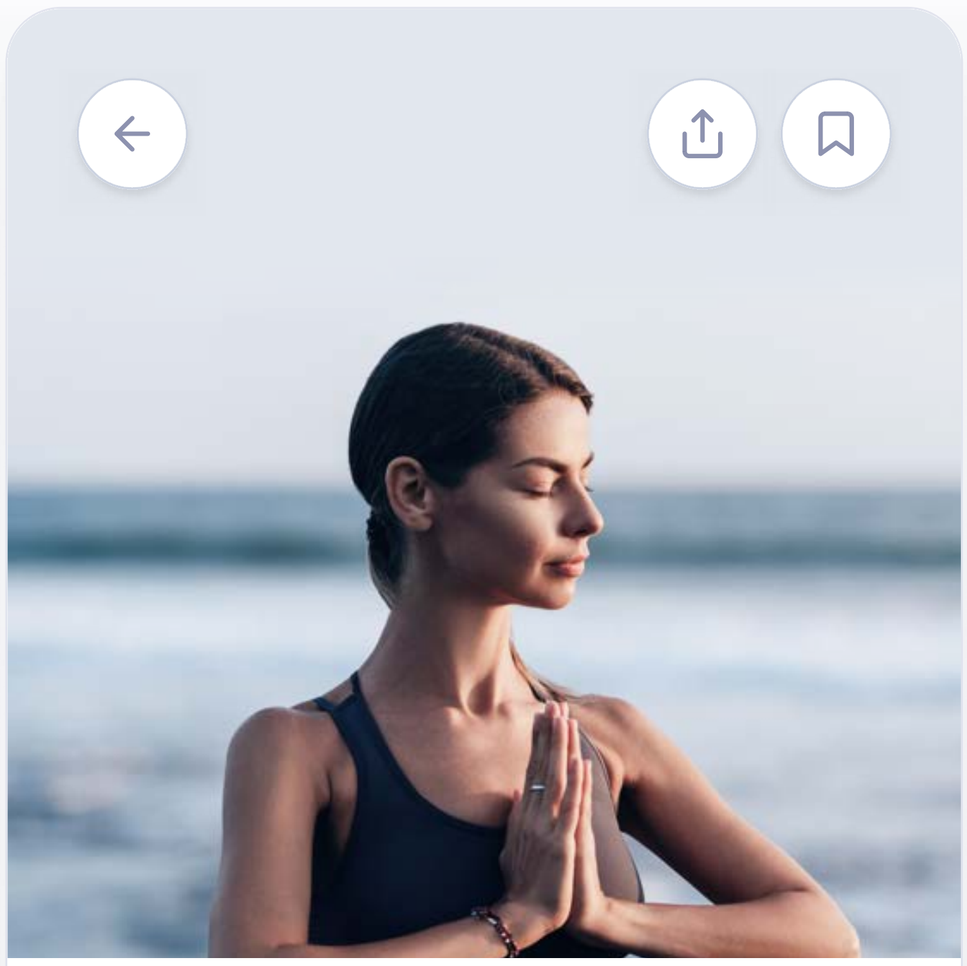
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TUTORIAL - LAYOUT AND SPACING

Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off

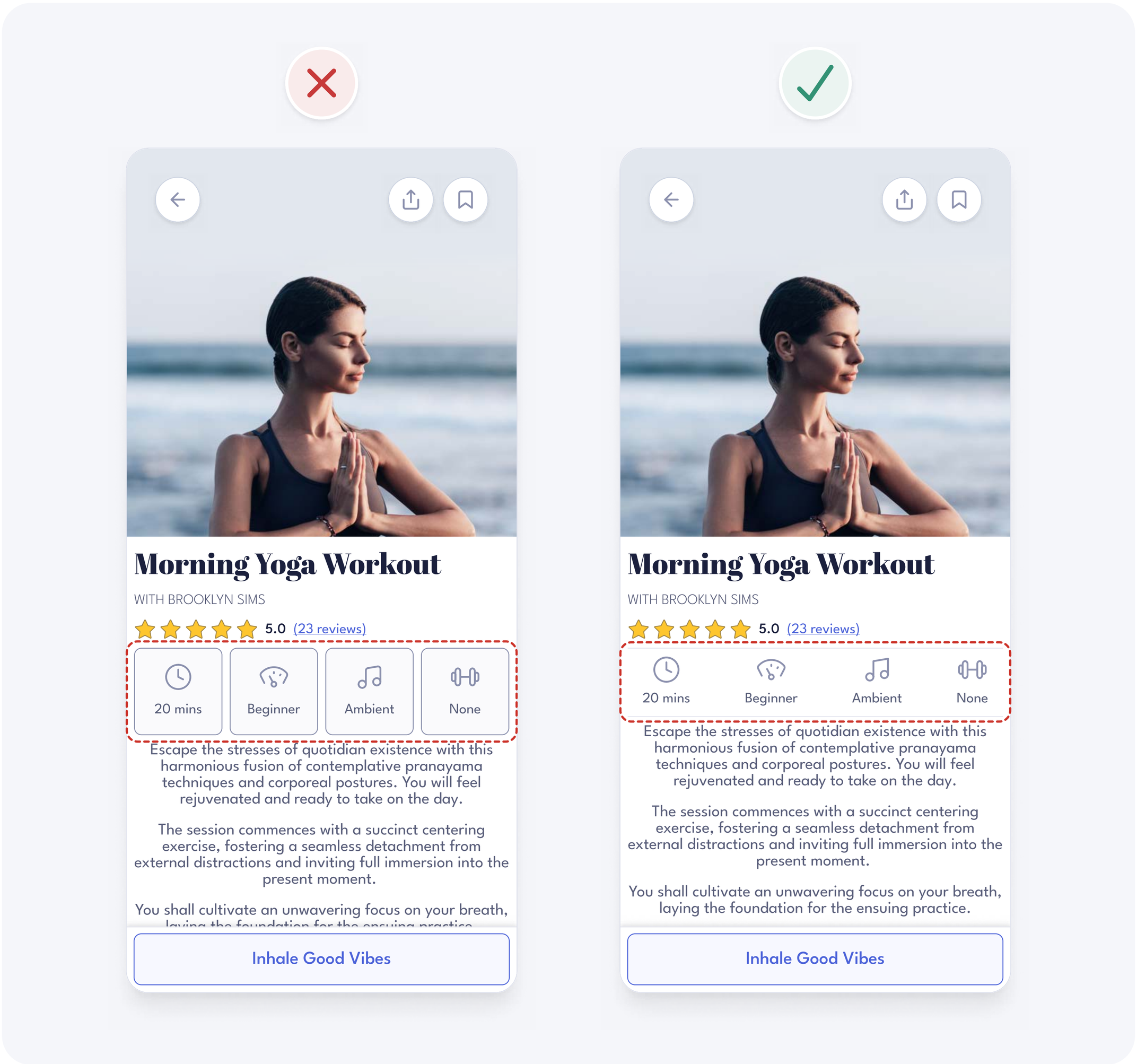


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Ensure similar looking elements function similarly

If elements look similar, people will expect them to work in a similar way. So try to ensure that you use a consistent visual treatment for elements with the same functionality.

In the fitness app example, the icon containers have a similar visual style to the button at the bottom. This makes them seem interactive, even though they’re not. Removing the button styling from the icons helps to avoid them being mistaken for interactive elements.

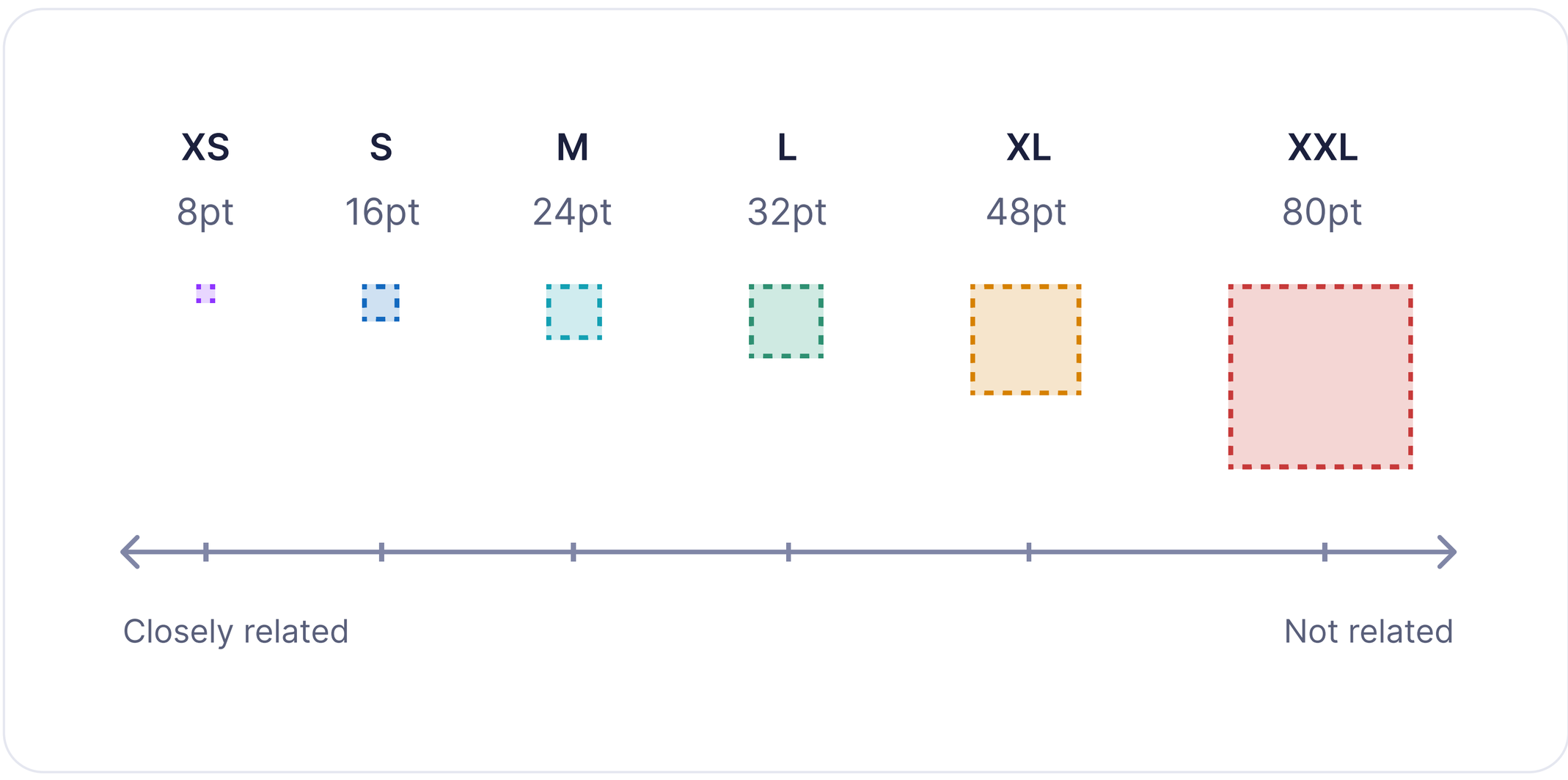


Icon styling is changed to help differentiate icons from buttons

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Use space to group related elements

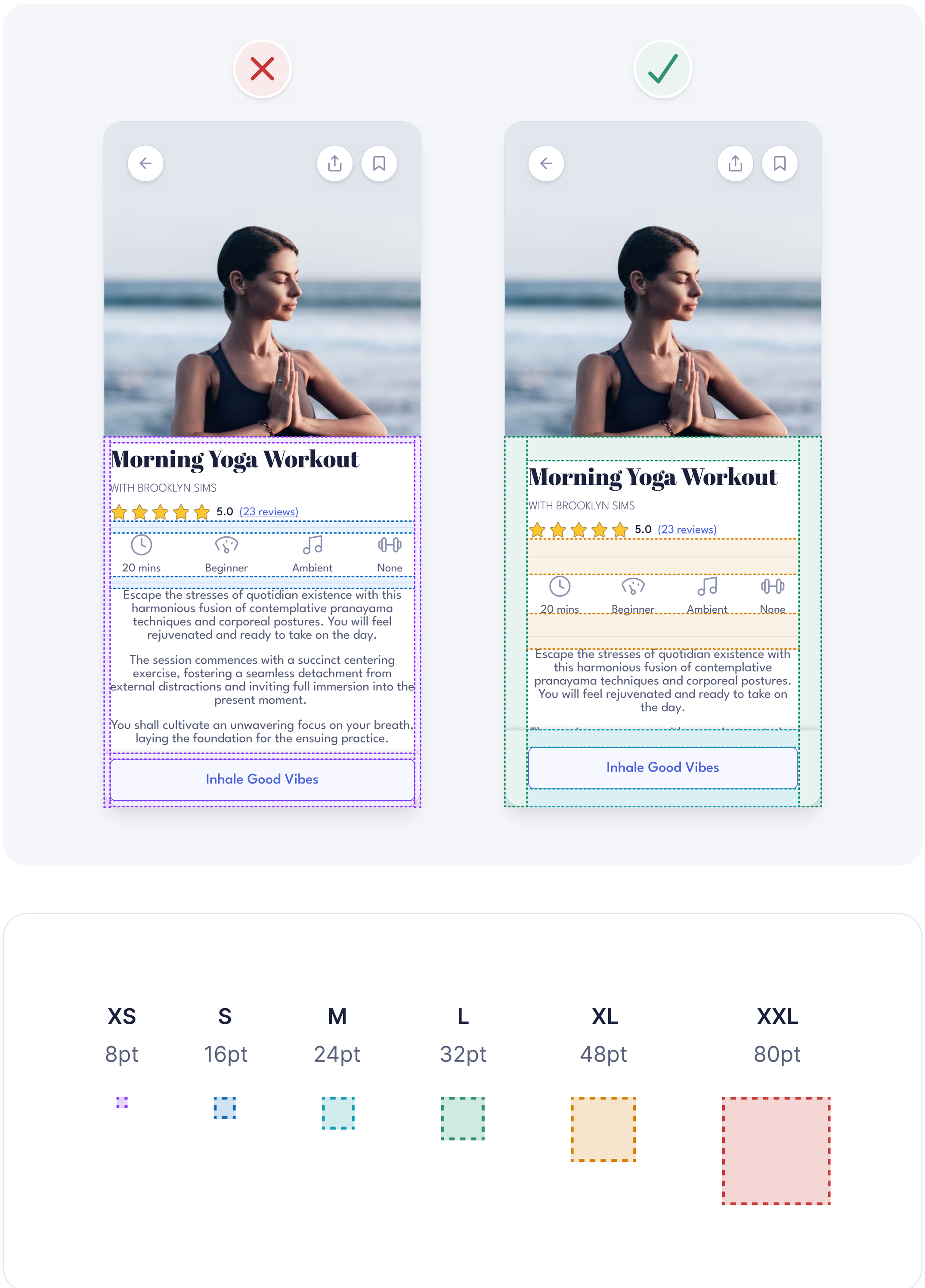
In the fitness app example, all of the content is spaced very closely together, making the design look cluttered and difficult to understand. Increasing spacing using predefined spacing options helps to clearly group content. This makes it more organised and easier to understand.



An example set of predefined spacing options

The amount of spacing between interface elements should depend on how closely related the elements are. More closely related elements should generally be closer together to show that they’re related. Unrelated elements should be separated by placing more space between them.

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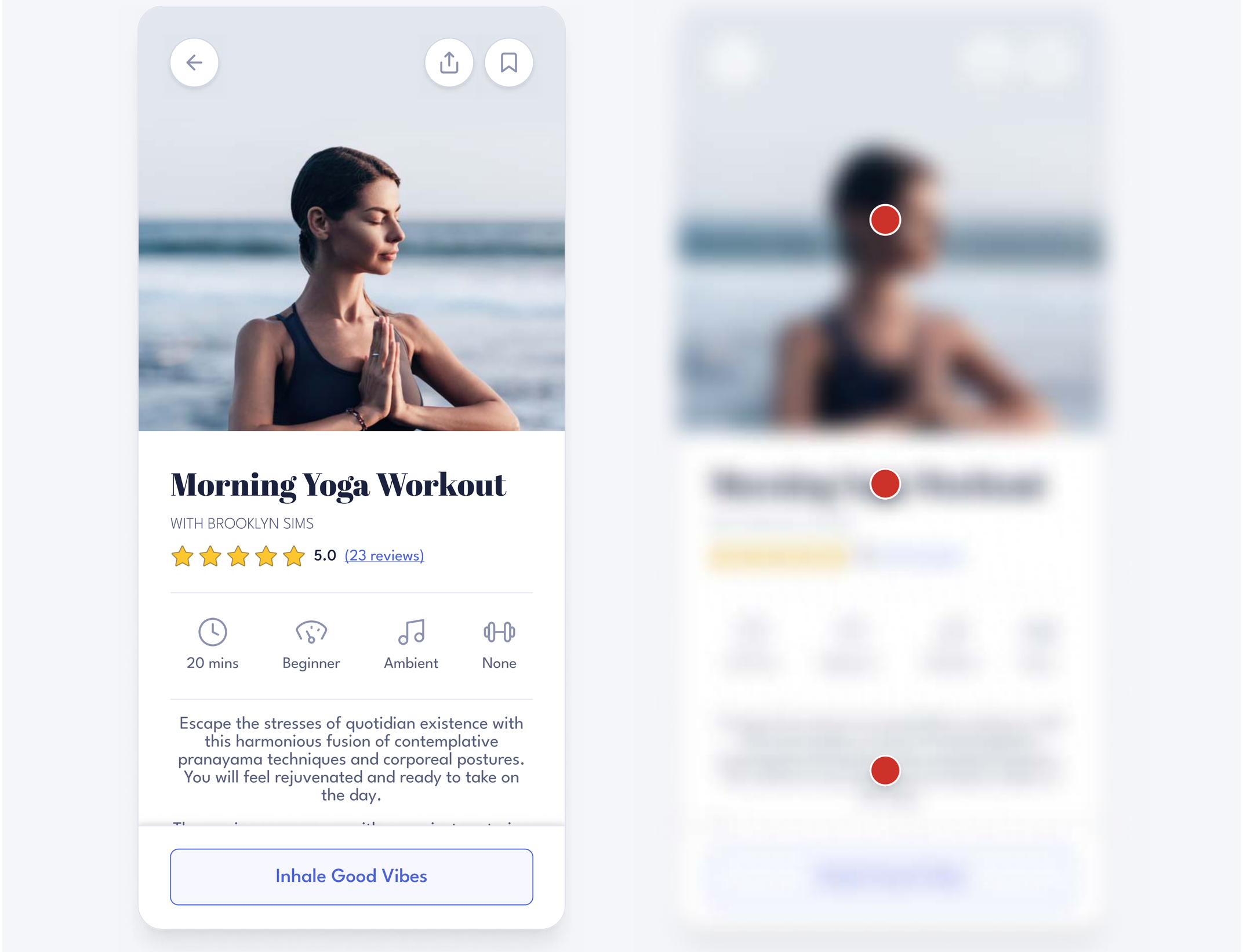


Predefined spacing options applied to the fitness app example

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Create a clear visual hierarchy

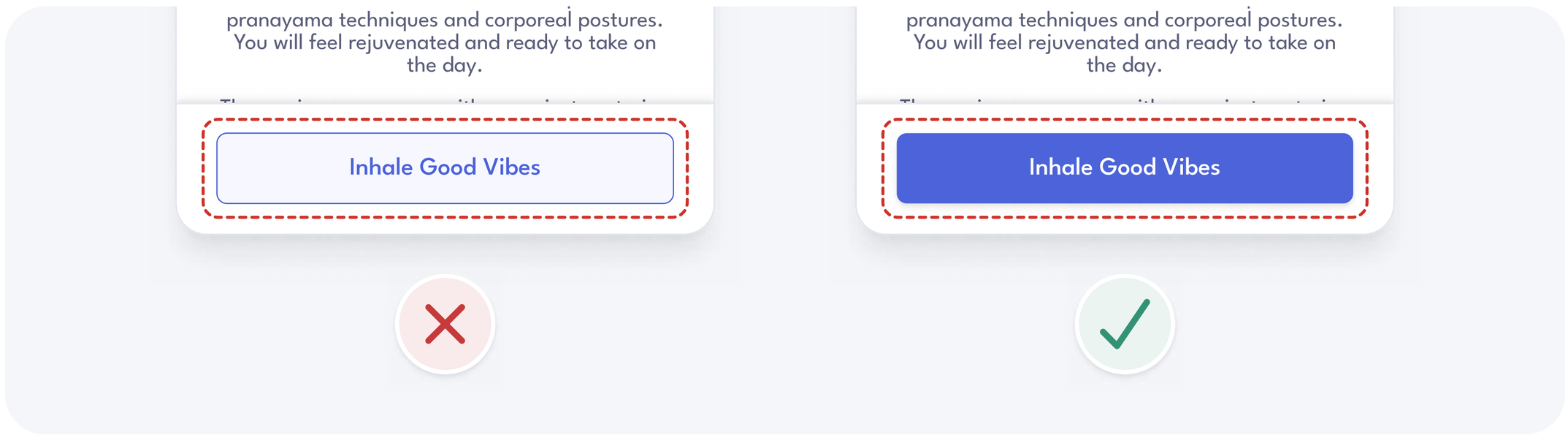
Let’s apply the Squint Test to the fitness app example to test the visual hierarchy. We can see that there are multiple elements with similarly strong prominence competing for attention. Meanwhile, the primary action at the bottom doesn’t stand out much.



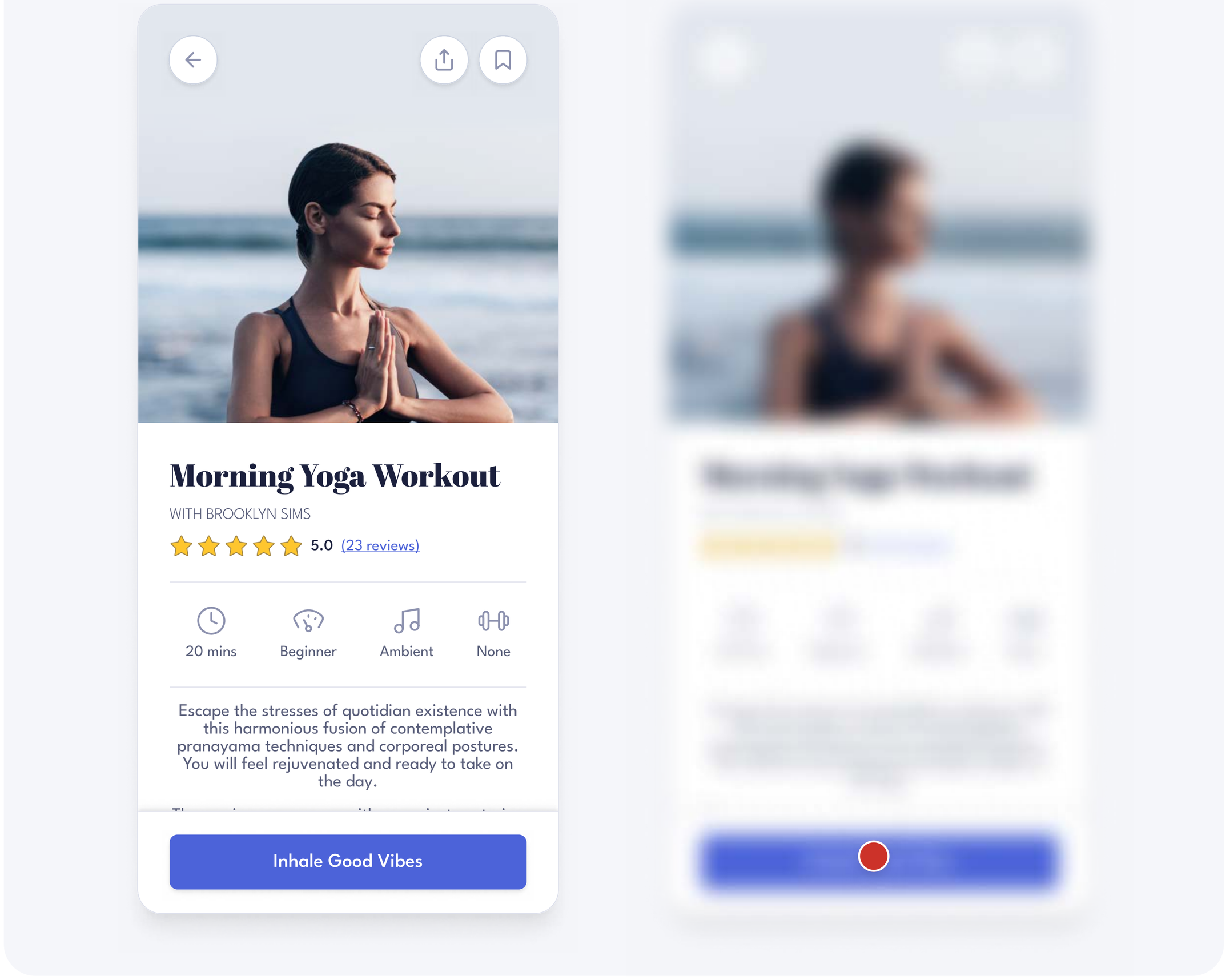
Applying The Squint Test to the fitness app example

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The primary action should generally be the most prominent element on an interface, given that it’s the most important. Apply the brand colour as a solid fill to give the button more prominence.



Applying the Squint Test to the updated design, the primary action is clearly the most prominent element.

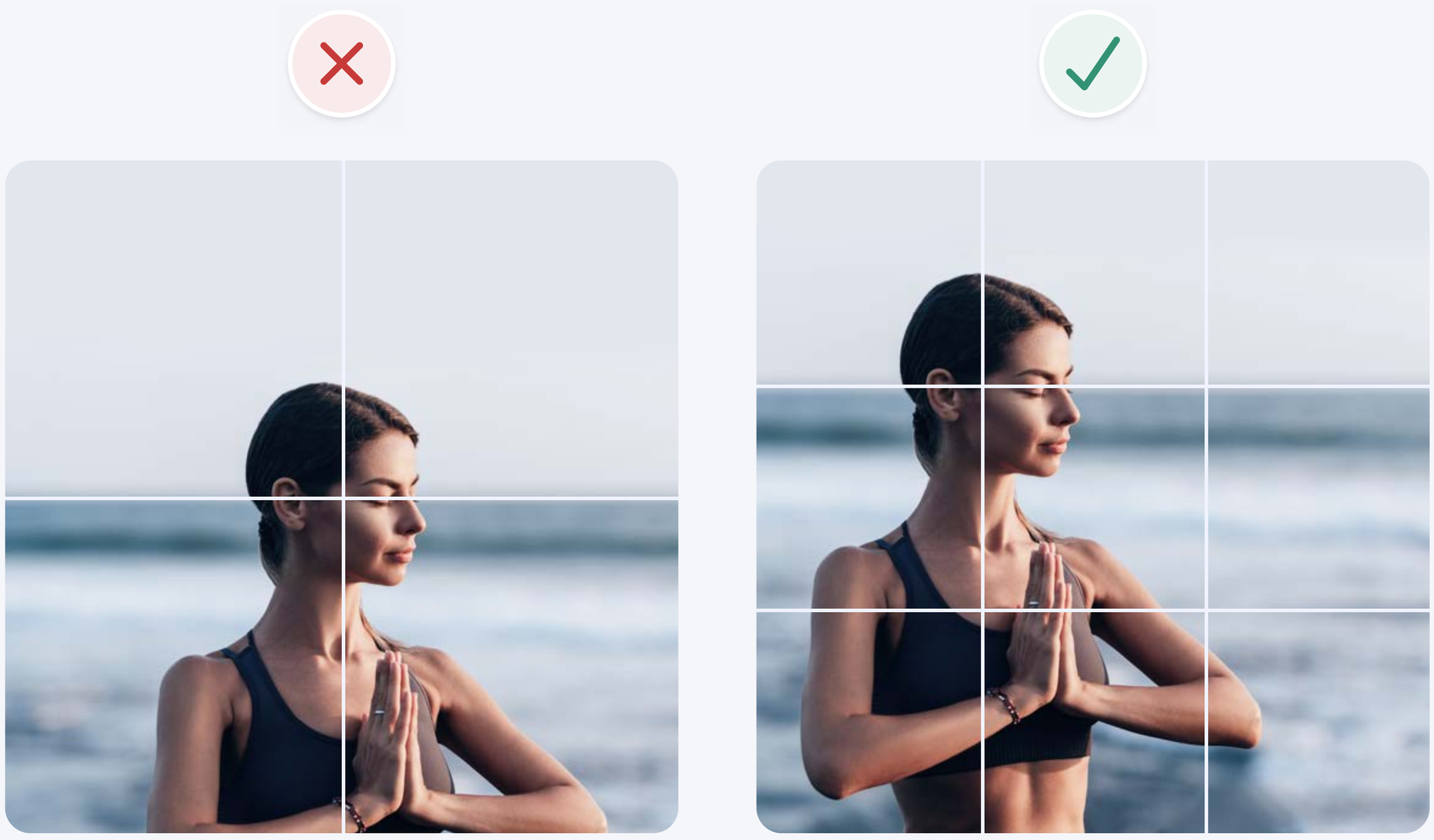


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Use the Rule of Thirds for photos

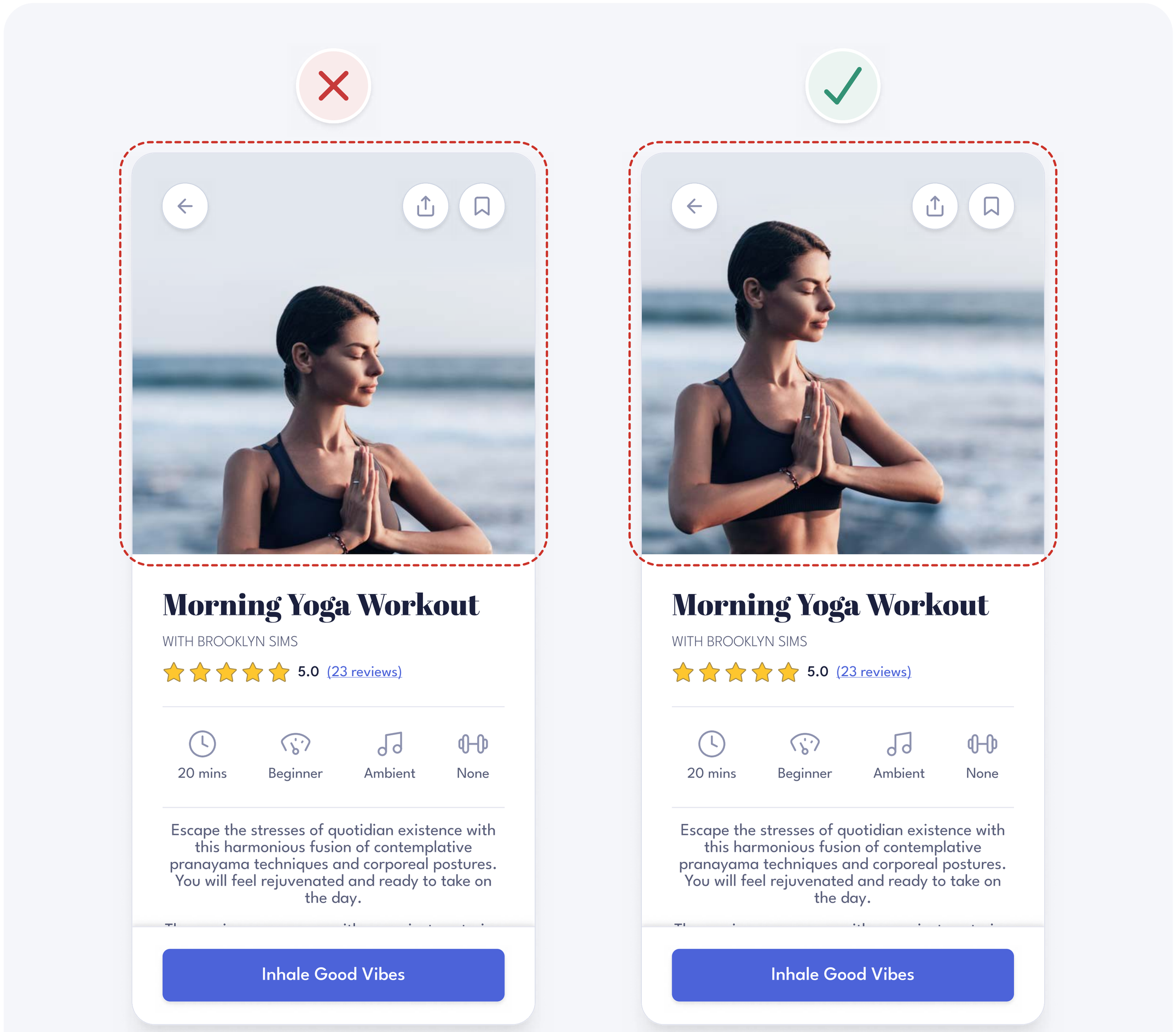
In the fitness app example, the photo looks a bit rigid and still, as it’s very symmetrical. The focal point is the person’s face and it’s positioned in the centre of the photo.

Let’s apply the Rule of Thirds. Instead of centre aligning their face, move it to align with one of the 4 points of intersection on the grid. The asymmetry introduces a sense of natural motion and flow. You should also make sure that the horizon aligns with the horizontal grid.



The photo is realigned based on the Rule of Thirds

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The photo is realigned based on the Rule of Thirds

Nice work. It’s amazing that simple things like spacing and visual hierarchy can be so powerful. I hope you’re starting to see that UI design isn't just a magical art form. A lot of it is made up from logical guidelines like the ones above. We’ll continue improving the example fitness app at the end of the next chapter.

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Chapter summary

- Group related elements by placing them in the same container, spacing them close together, making them look similar, or aligning them in a continuous line.
- Create a clear visual hierarchy by presenting information in order of importance. Use size, colour, contrast, spacing, position, and depth to control the prominence of elements.
- Understand that interfaces are made up of lots of rectangles within rectangles. Each rectangle can have an outer margin, inner padding, and a border according to the box model.
- Create a small set of predefined spacing options in increments of 8 points. Space elements based on how closely related they are.
- Align interface elements to a 12 column grid structure to help make the interface easier to understand. Try to avoid using multiple different alignments to keep things neat and tidy.

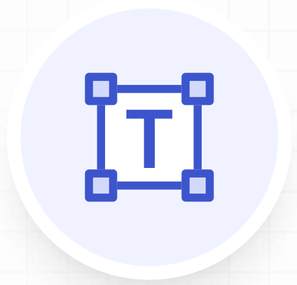
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Your progress

4 of 8 chapters completed

- ✓ Fundamentals
- ✓ Less is more
- ✓ Colour
- ✓ **Layout and spacing**
- 5 Typography
- 6 Copywriting
- 7 Buttons
- 8 Forms

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CHAPTER 5

Typography

Learn a system of logical guidelines to make text beautiful and easy to read

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Use a single sans serif typeface

It’s safest to use a single sans serif typeface for most interface designs. To see why, let’s learn a bit about typefaces.

A typeface is a set of related fonts with a similar style or aesthetic. Helvetica is an example of a san serif typeface. Fonts are variations within a typeface, like weights or sizes. For example, Helvetica Bold and Helvetica Regular are 2 different fonts within the Helvetica typeface.

There are 5 main classifications of typefaces: serif, sans serif, script, display, and monospaced.



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Serif typefaces

Serif typefaces include decorative tails or feet at the ends of letters (highlighted below). They often convey a traditional, classic, or formal mood. Some serifs are more legible than others and can be used at small sizes. Others are better suited for use at large sizes.



Sans serif typefaces

Sans serif typefaces don’t include decorative tails or feet at the ends of letters. They generally look more modern due to their simplicity. Sans serif typefaces are highly legible, making them suitable for use at small and large sizes. Due to their simplicity and lack of character, sans serif typefaces are a safe and neutral option that suits most interface designs.



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Script typefaces

Script typefaces are based on handwriting. Their low legibility means that they’re not suitable for use at small sizes. Script typefaces can be effective at conveying a formal or casual mood at large sizes.



Display typefaces

Display typefaces come in a wide range of varied styles. They’re decorative typefaces specifically designed to be read at large sizes. Due to their strong character and detail, they can be especially good at conveying a range of different moods. Display typefaces aren’t suitable for use at small sizes due to their visual complexity.

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Monospaced typefaces

In most typefaces, the horizontal space that a character takes up depends on its natural width. For example, an “i” takes up less space than a “w”. In a monospaced typeface, every character takes up the same amount of horizontal space.

For this reason, they’re often used for displaying code. They’re also useful for displaying numbers to make them easier and faster to compare.



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Reasons to use a single sans serif typeface

If you’re just starting out, it’s safest to use a single sans serif typeface for most interface designs for the following 3 reasons:

1. Legibility

Legibility is a measure of how easily individual characters can be distinguished and identified. Sans serif typefaces are generally the most legible. The main purpose of interface text is to clearly communicate information so that people can achieve a task. If a typeface isn’t legible, it makes the interface harder to read, understand, and use.

2. Neutrality

Sans serif typefaces generally don’t convey a strong mood or personality. This can be helpful for the following reasons:

- The typeface will fit with most brand personalities.
- The content is the focal point, rather than the typeface.
- There’s less chance you’ll choose an unsuitable typeface.

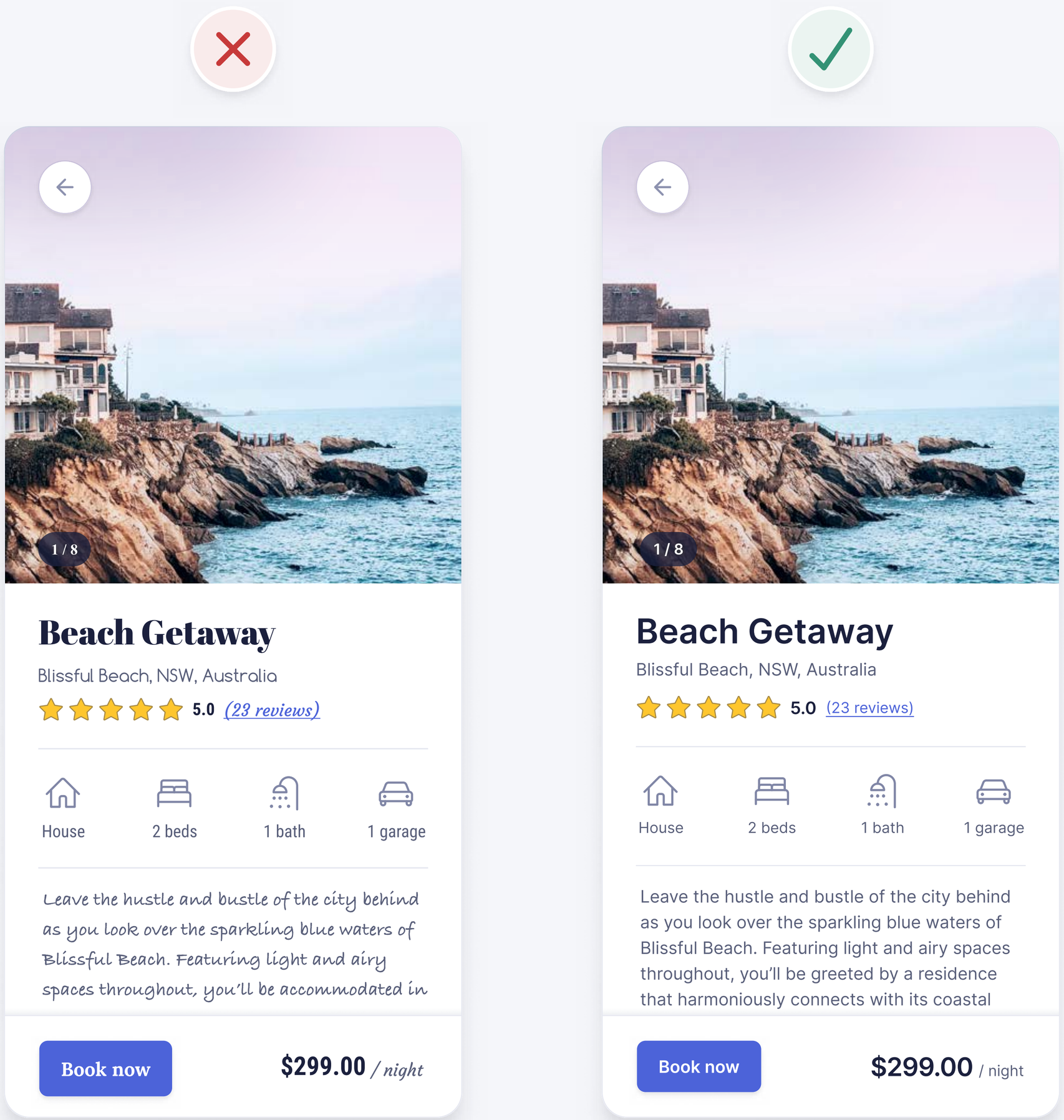
3. Simplicity

Sans serif typefaces are generally simpler than others as they have less character and detail. Complicated typefaces can be distracting and can increase cognitive load, especially if there’s more than one.

Simplifying your typography can help improve usability and aesthetics. Less is more when it comes to typography.

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In the following example, multiple typefaces make the interface look complex and cluttered. Some text is also difficult to read at a small size. Using a single sans serif typeface, like Inter, removes complexity. This helps decrease cognitive load, improve legibility, and it looks a lot neater too.



Example of an interface with multiple typefaces versus one with a single sans serif typeface

I'm not saying that you shouldn't use serif typefaces for interface design. They can work really well in some cases, but it's generally safest to use sans serifs until you gain more experience.

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Tips for choosing a sans serif typeface

With so many typefaces to choose from, it can be difficult to know where to start. Here are a few tips to help you choose a suitable sans serif typeface:

- Choose a **popular** typeface that's been tried and tested by many. You can usually sort font directories by popularity.
- Look for typefaces that come in a **variety of weights**, as they're generally better quality. Those with light, regular, medium, semibold, and bold weights are a good place to start.
- Look for typefaces with **taller lower case letters** and **greater letter spacing**, as they're generally more legible at small sizes. The height of lowercase letters in a typeface is known as the x-height.
- Get inspiration from **designers and companies** known for good design. Inspect their website code or check their brand guidelines for their typeface.
- If your interface needs to **support multiple languages**, make sure the typeface does too.
- Look for typefaces with **OpenType features**. They support both Mac and Windows computers, usually offer better language support, and often have additional advanced features.
- When in doubt, just use the default **system typeface** native to the platform, as it's tried and tested and loads quickly.

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Evoke emotion using a second typeface for headings

While it’s safest to use a single sans serif typeface for most interface designs, you might want to add some personality depending on the brand. As you get more confident with typography, try introducing a second typeface for headings only. Since you’re only using the second typeface for headings, you don’t need to worry about legibility at small sizes.



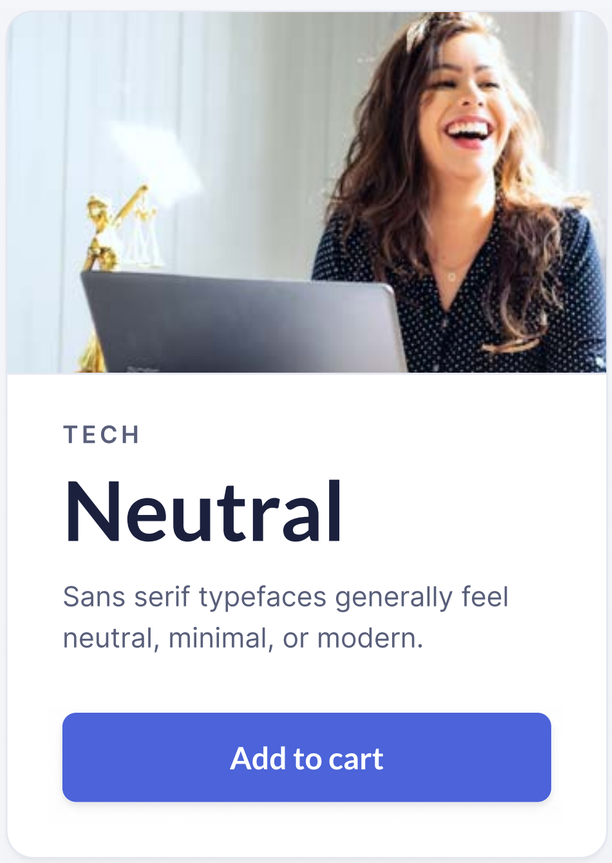
Examples of typefaces and the moods they convey

Along with colour, shape, and imagery, you can use typefaces to help evoke emotion or convey a mood. While the emotions people feel from different typefaces are largely subjective (based on personal experiences, preferences, and culture), there are still some general guidelines you can follow to choose a typeface that fits the brand personality.

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Different typefaces generally evoke different feelings, for example:

- **Sans serif** typefaces generally feel neutral, minimal, or modern.
- **Serif** typefaces generally feel traditional, established, or classic.
- **Rounded sans serif** typefaces generally feel fun, soft, or playful.
- **Casual script** typefaces generally feel personal or handmade.
- **Formal script** typefaces generally feel formal, feminine, or elegant.
- **Light sans serif** typefaces generally feel chic, modern, or luxurious.

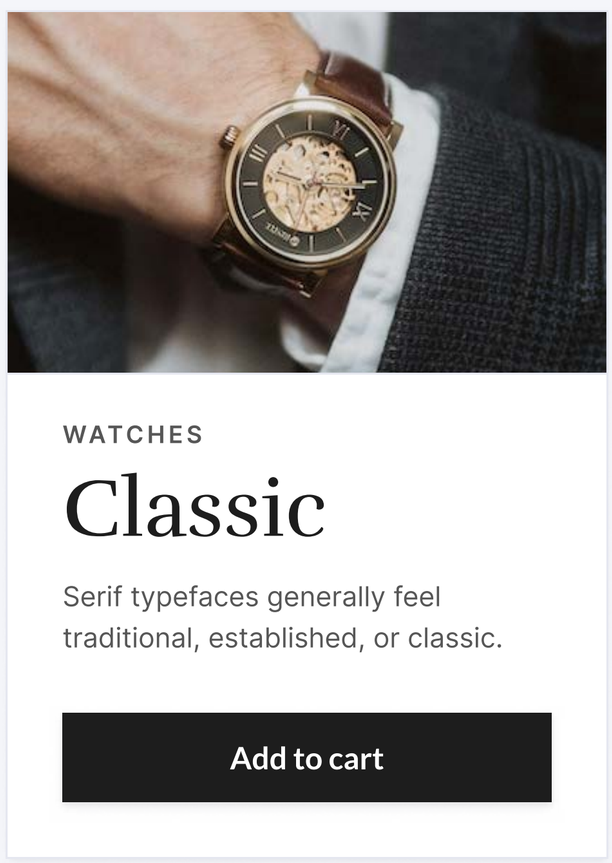


TECH

Neutral

Sans serif typefaces generally feel neutral, minimal, or modern.

Add to cart

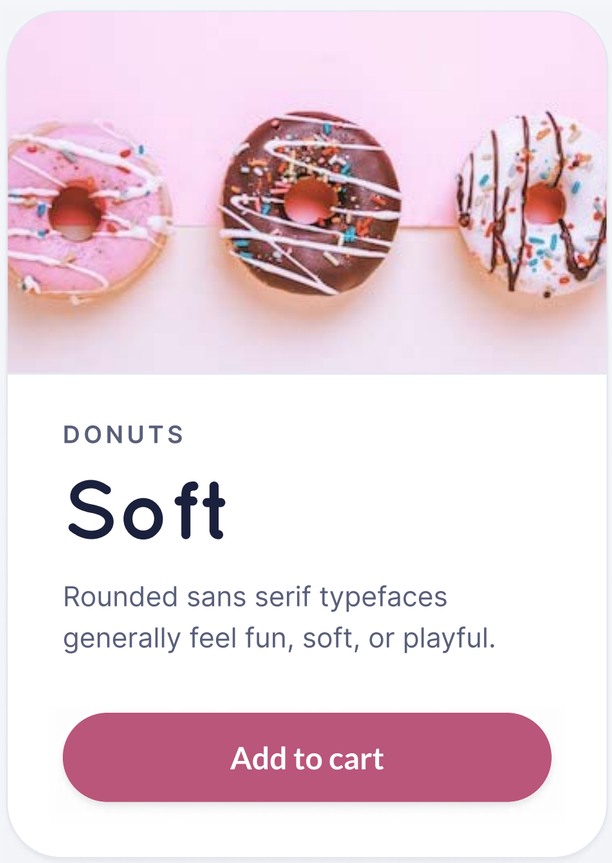


WATCHES

Classic

Serif typefaces generally feel traditional, established, or classic.

Add to cart



DONUTS

Soft

Rounded sans serif typefaces generally feel fun, soft, or playful.

Add to cart

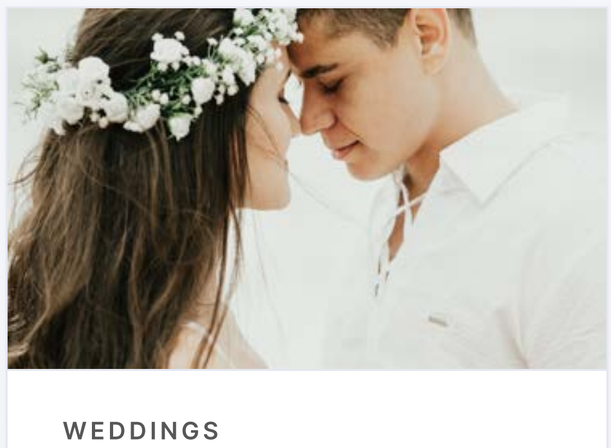


WOODWORK

Handmade

Casual script typefaces generally feel personal or handmade.

Add to cart



WEDDINGS

Elegant

Formal script typefaces generally feel formal, feminine, or elegant.

Add to cart



SKINCARE

Luxury

Light sans serif typefaces generally feel chic, modern, or luxurious.

Add to cart

Examples of typefaces and the moods they convey

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Use regular and bold font weights only

Just because there are lots of font weights available in a typeface, doesn’t mean you need to use all of them in your designs. Using lots of different font weights can add noise and clutter to your interface. It also makes it more difficult to use each font weight consistently.

Keep your design system simple and concise by using regular and bold font weights only. Some typefaces have a semi-bold font option that you can use instead of bold if bold is too heavy. Quick usage tips:

- Use bold font weight for headings to emphasise them.
- Use regular font weight for other smaller text.
- Reserve very thin or thick font weights for headings and larger text, as they can be difficult to read at smaller sizes.

~~Thin~~

~~Light~~

Regular

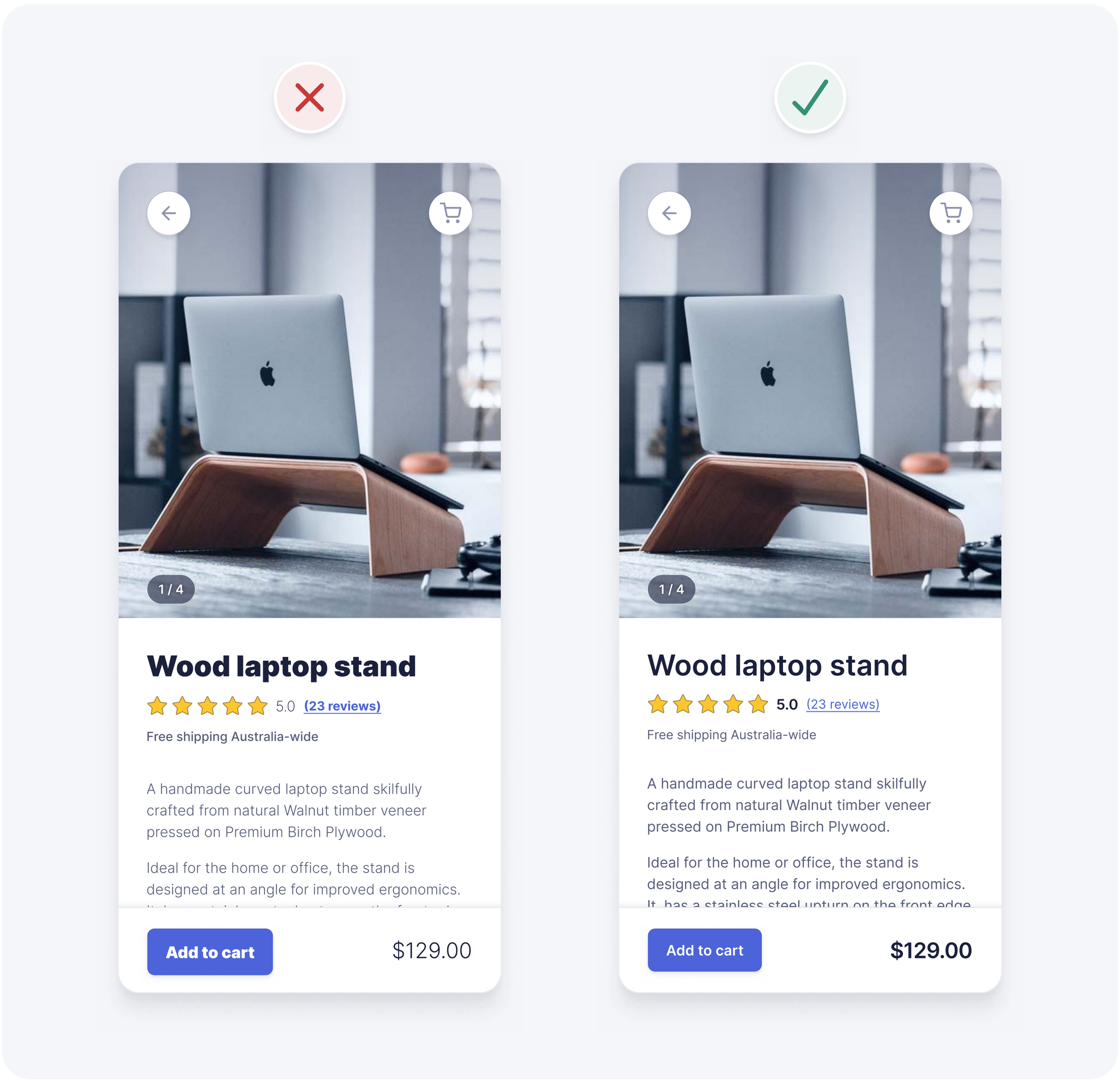
~~**Semi-bold**~~

Bold

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In the following example, multiple font weights are used, including thin, light, regular, medium, bold and extra bold. It looks cluttered and complex because your eyes need to process so many different font weights.

Using only regular and bold weights simplifies the design, making it look neater and easier to understand. It also speeds up the design process, as there are fewer decisions to make regarding typography.



Example of an interface using multiple font weights versus one using only regular and bold

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Use a type scale to set font sizes

Using a type scale is a simple and logical way to create a set of balanced font sizes that work well together. It's best to have a limited set of font sizes in your design system. It helps speed up decision making and improve consistency across your product.

To create your set of font sizes, start with a base font size for body text, then keep multiplying it by a certain scale to create larger font sizes.

Here are some popular type scales, ordered from smallest to largest:

- 1.067 – Minor Second
- 1.125 – Major Second
- 1.200 – Minor Third
- 1.250 – Major Third
- 1.333 – Perfect Fourth
- 1.414 – Augmented Fourth
- 1.500 – Perfect Fifth
- 1.618 – Golden Ratio

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For example, start with a base font size of 16px and use a “1.200 - Minor Third” scale. Multiply 16px by 1.2 to get the next font size of 19.2px. Round it to 20px for simplicity. Then take 20px and multiply it by 1.2 to get the next font size, and so on.

TYPE SCALE (1.200)	SIZE	LINE HEIGHT
Heading 1	40px	48px
Heading 2	32px	40px
Heading 3	24px	32px
Heading 4	20px	28px
Small	16px	24px
Tiny	14px	20px

An example set of font sizes using a slightly modified Minor Third type scale

With most type scales, you’ll notice that the resulting font sizes have messy decimal values. Round font sizes to the nearest whole number for simplicity. It’s not crucial that font sizes are divisible by 4, but try to ensure that their line height is. This will align your text neatly to a 4pt vertical layout grid. You’ll learn more about line height soon.

You don’t need to stick strictly to a scale. Once you get more confident with font sizes, you can adjust them to better suit the interface you’re designing.

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Small type scales

Using a small type scale, like “Major Second”, will result in less of a difference between font sizes than using a large type scale. Small type scales are generally more suitable for complex website applications, tools, and dashboards where more detail is needed.

Large type scales

Using a large type scale, like “Perfect Fifth”, will result in a larger difference between font sizes. Large type scales are generally more suitable for less complex interfaces, like marketing websites.

Responsive type scales

While large type scales can work well on large screens, they can cause text to wrap onto the next line on smaller mobile screens. To fix this issue, you could consider switching to a smaller type scale on mobile.

Remember not to create text styles if you don’t need them. Every detail of your design system should earn its place, otherwise, it’s adding unnecessary noise and complexity.

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Make long body text bigger

Do you often find yourself zooming in on website articles to make the text bigger so it’s easier to read? You’re not alone. Most websites have relatively small text, especially older ones. Designers also tend to prefer small text, as it generally looks nicer.

Most people will be reading text from around an arm’s length away, whether it’s on a phone, tablet or desktop. So, make sure your body text is legible from that distance. For most typefaces, make long body text at least 18px to help improve readability.

In the following example, the body text is too small at 14px. Increasing it to 18px makes it much easier to read.

14px body text

TYPOGRAPHY

Too small

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed pharetra, enim sed fermentum pellentesque, nulla lectus maximus est, a interdum leo metus id magna. Vivamus ut odio vitae orci.

Pellentesque semper urna eu massa id imperet facilisis. Cras mauris sed tortor, feugiatis tellus at, tinc dunt efficit nulla.

18px body text

TYPOGRAPHY

Bigger is better

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed pharetra, enim sed fermentum pellentesque, nulla lectus maximus est, a interdum leo metus id magna. Vivamus ut odio vitae orci.

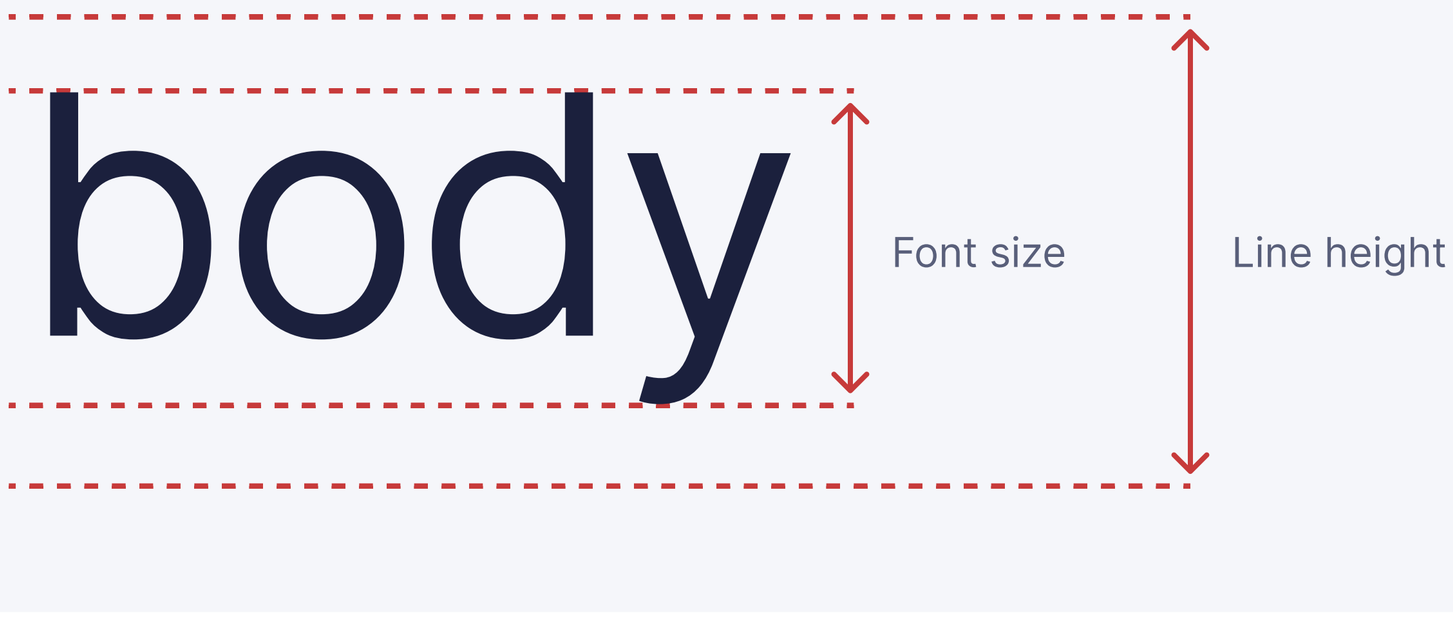
Pellentesque semper urna eu massa id imperet facilisis. Cras mauris sed tortor, feugiatis tellus at, tinc dunt efficit nulla.

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Use at least 1.5 line height for long body text

Line height is the vertical distance between two lines of text. For accessibility and readability, especially for long body text, ensure that line height is at least 1.5 (150%). Keeping line height between 1.5 and 2 generally works well.

The white space between lines helps prevent people from rereading the same line of text. It also looks and feels more comfortable to read.



Some quick tips to set a suitable line height:

- Longer lines of text require a taller line height to help separate them.
- Darker and heavier typefaces require a taller line height to help lighten and separate lines of text.
- Some typefaces look larger than others, even though they’re the same font size. Typefaces that look larger require a taller line height.

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In the following example, a line height of 1 (100%) is difficult to read because the lines of text aren’t clearly separated. Increasing the line height to 1.6 (160%) clearly separates each line. This makes it easier for people to track from the end of one line to the start of the next.



1 line height

TYPOGRAPHY

Squashed

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed pharetra, enim sed fermentum pellentesque, nulla lectus maximus est, a interdum leo metus id magna. Vivamus ut odio vitae orci.

Pellentesque semper urna eu massa id imperet facilisis. Cras mauris sed tortor, feugiatis tellus at, tinc dunt efficit nulla.



1.6 line height

TYPOGRAPHY

Comfortable

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed pharetra, enim sed fermentum pellentesque, nulla lectus maximus est, a interdum leo metus id magna. Vivamus ut odio vitae orci.

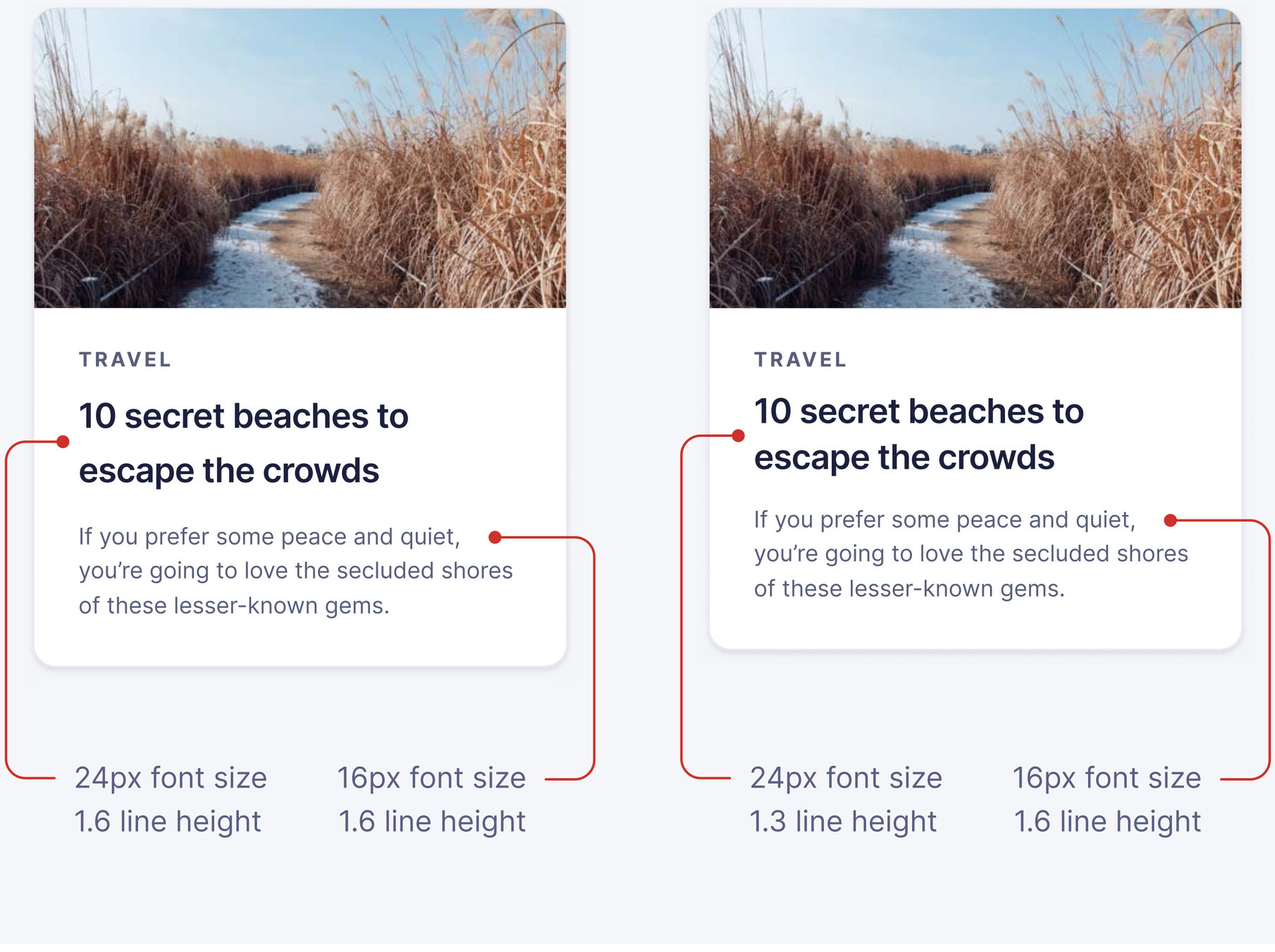
Pellentesque semper urna eu massa id imperet facilisis. Cras mauris sed tortor, feugiatis tellus at, tinc dunt efficit nulla.

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Decrease line height as font size increases

The purpose of the spacing between lines is to help people read from one line to the next, comfortably. While a line height of at least 1.5 (150%) works well for body text, it’s unnecessary on larger sized text such as headings. The larger the font size, the smaller the line height should be, to maintain comfortable spacing.

In the following example, the line height of both the heading and paragraph text is 1.6 (160%). Because line height is relative to font size, the actual space between lines of heading text is much larger than the space between lines of paragraph text. Decrease the line height for larger text to create a consistent gap between lines.

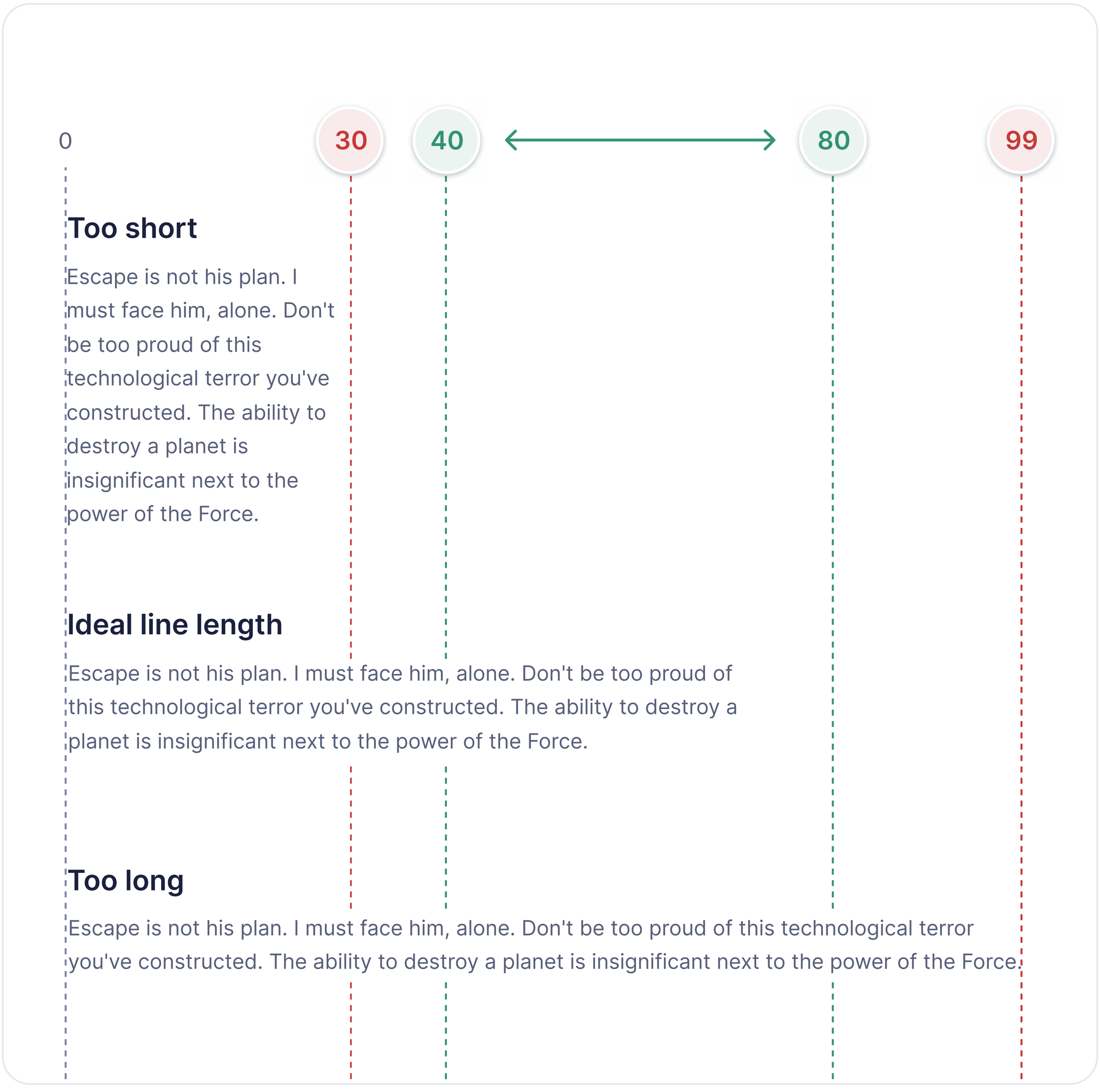


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Ensure ideal line length

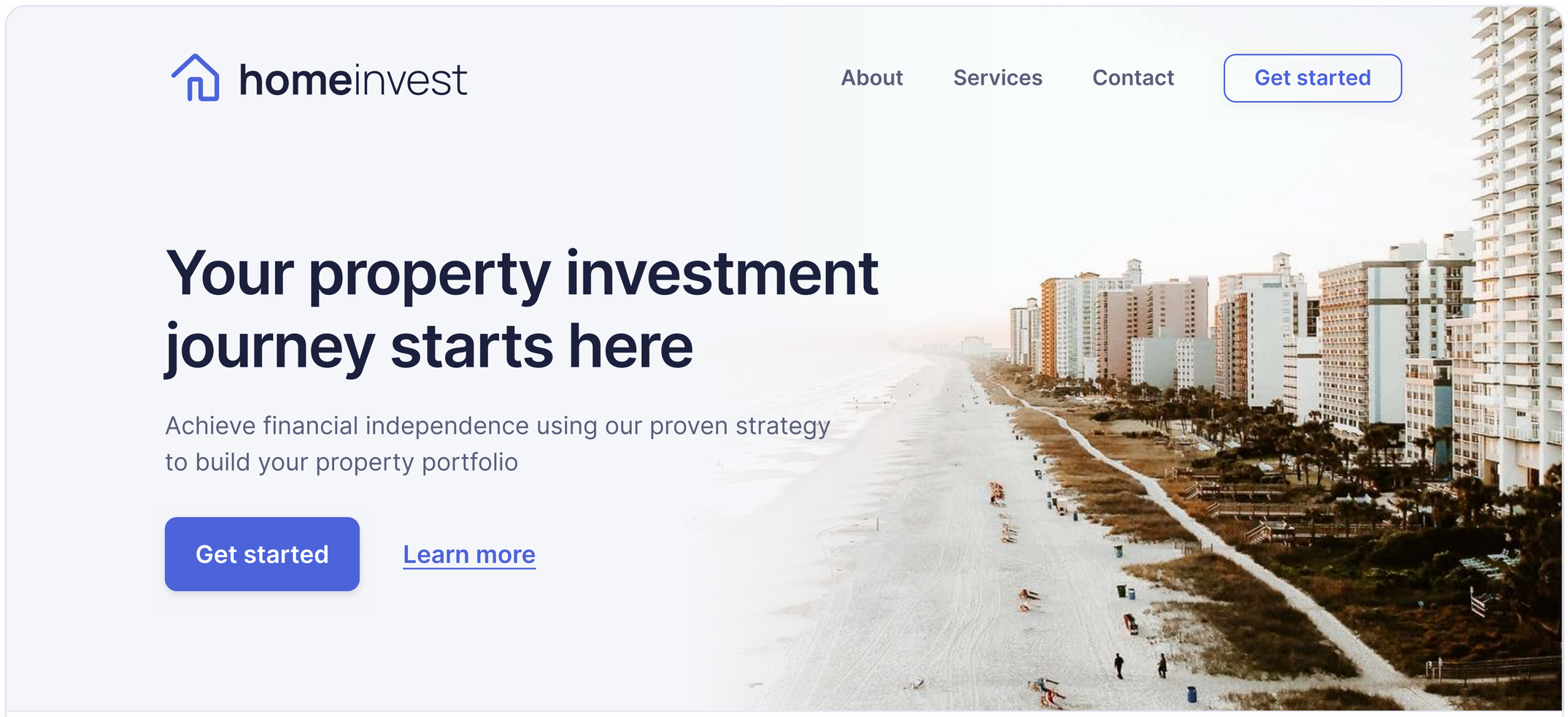
Ensure text is **40 - 80 characters per line** (including spaces) to improve readability. If lines are too long, it makes it harder for people to gauge where the line starts and ends.

If lines are too short, your eyes get stressed from having to travel back too often. A comfortable line length is especially important for long body text.



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Uncomfortably long line lengths are very common, like in the following landing page example.



Example of an uncomfortably long line length

You don’t need to use the full width of the page for your text, as it hinders readability. Instead, keep your line length between the recommended character range and align your block of text to the left or centre of the page.

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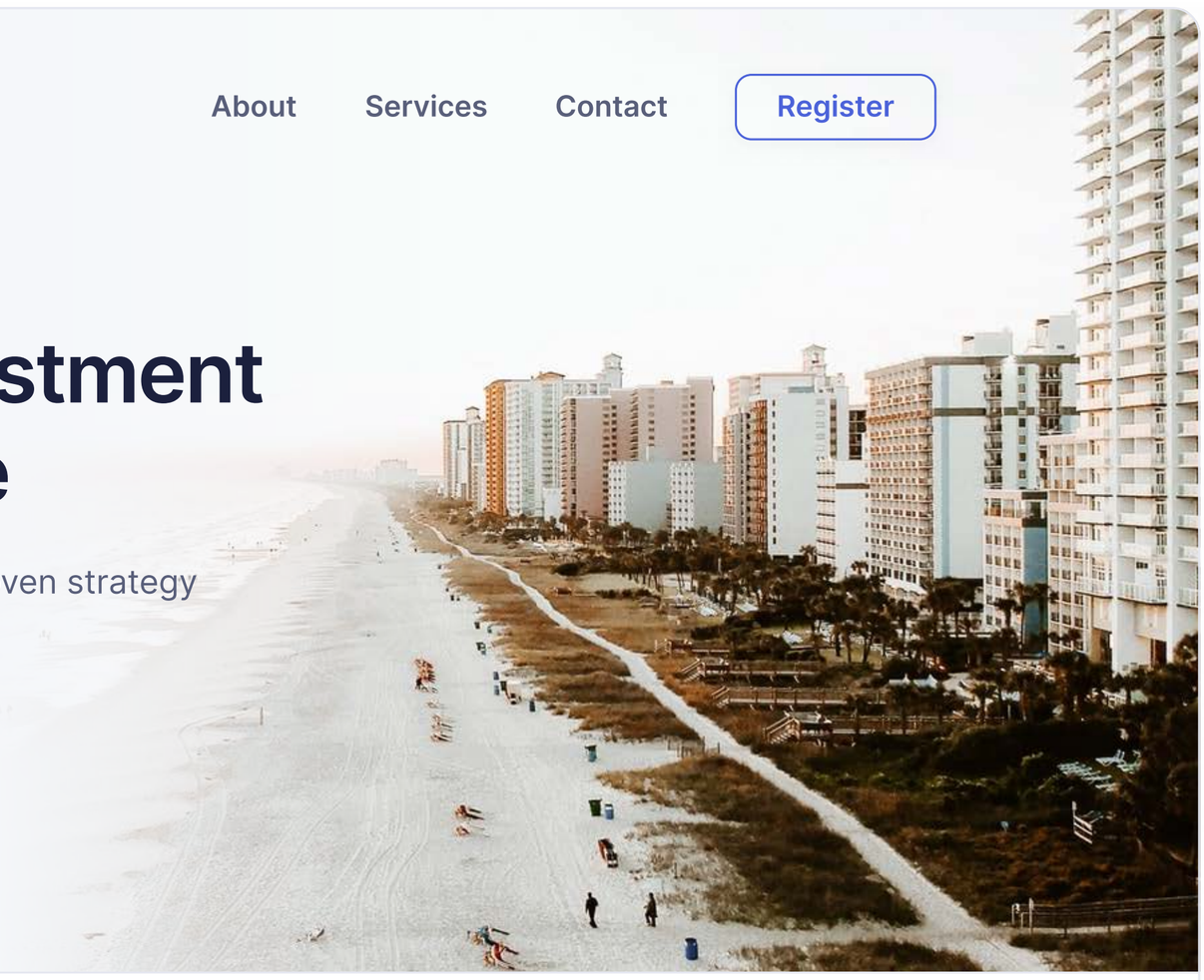
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Your property investment journey starts here

Achieve financial independence using our proven strategy to build your property portfolio

Get started Learn more



Why use our services

Choosing the right partner for your property investment journey is crucial, and here's why our services stand out. We bring a wealth of expertise, providing you with tailored strategies that align with your financial goals.



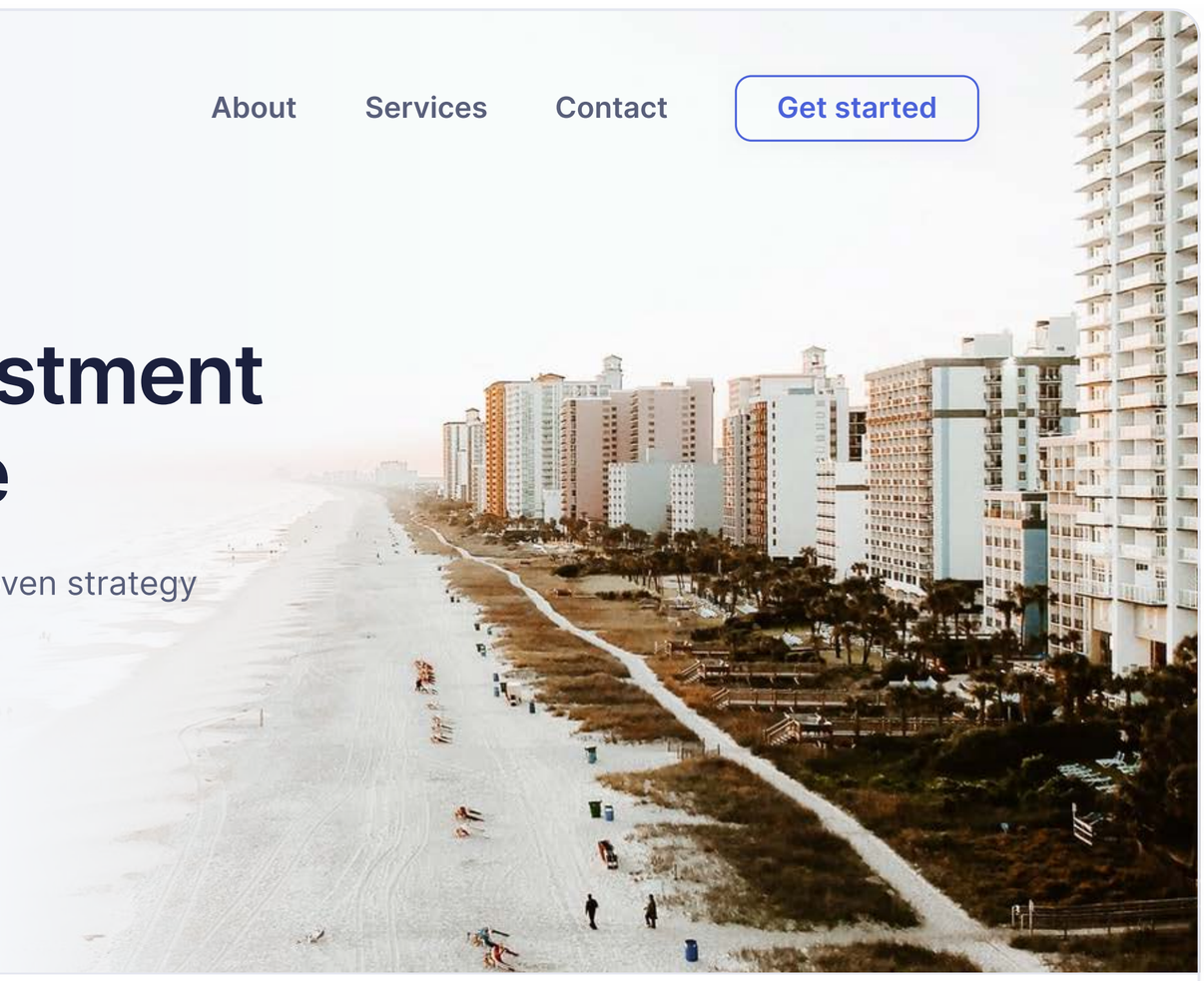
homeinvest

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Your property investment journey starts here

Achieve financial independence using our proven strategy to build your property portfolio

Get started Learn more



Why use our services

Choosing the right partner for your property investment journey is crucial, and here's why our services stand out. We bring a wealth of expertise, providing you with tailored strategies that align with your financial goals.



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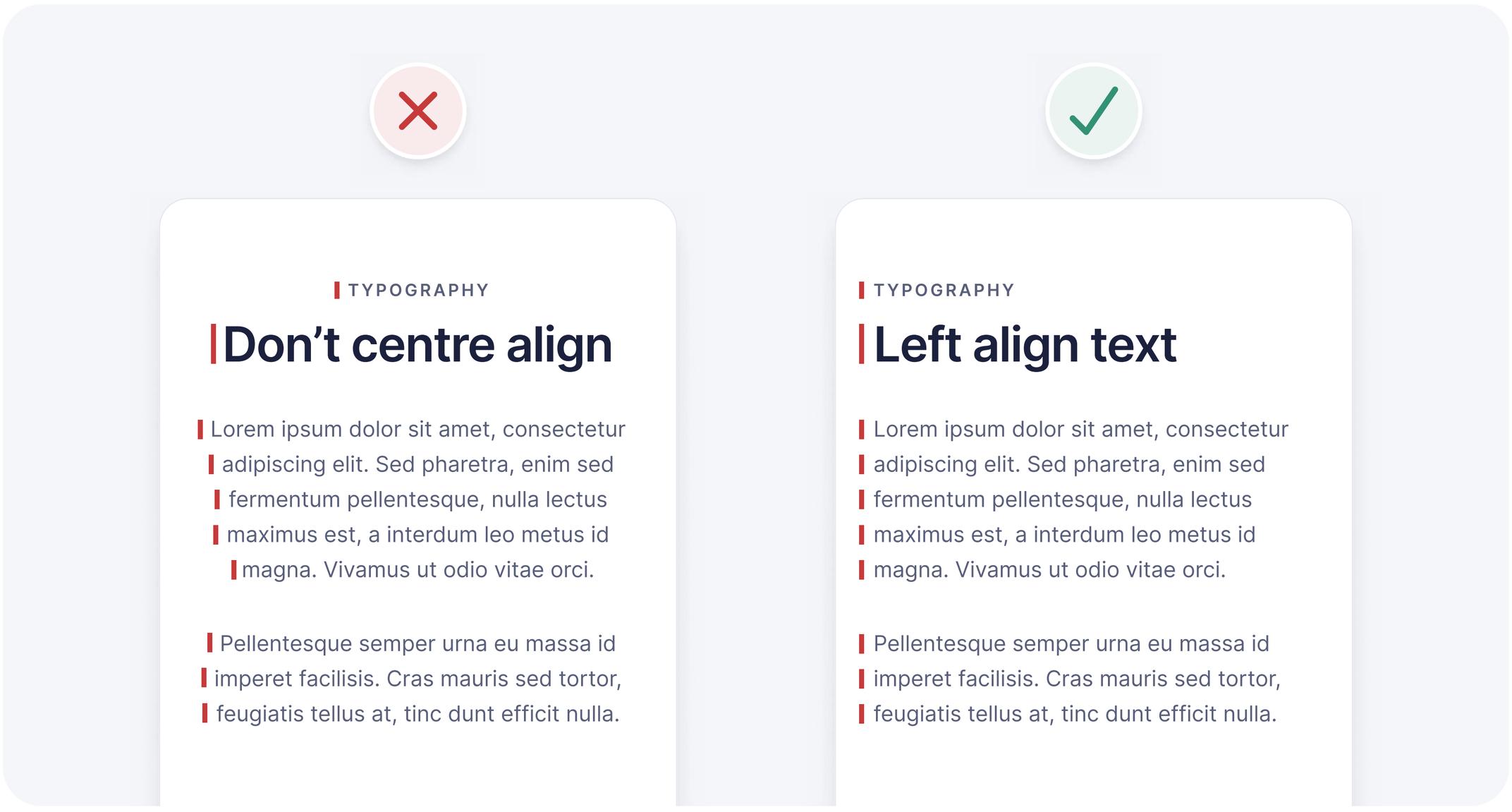
Left align text

English is read from left to right, downwards in an F-shaped pattern. So it’s best to keep text left aligned for optimal readability. For long body text, it’s safest to avoid centre aligned or justified text. It’s more difficult to read, especially for those with cognitive disabilities.

Also, avoid combinations of different text alignments. It’s harder for your eyes to follow and can look messy.

Don’t centre align long body text

Centre alignment can work for headings and short text, as it can be quickly read. However, centre alignment makes longer body text harder to read, because the starting point of each line changes. Your eyes need to work harder to find the starting point of each line.



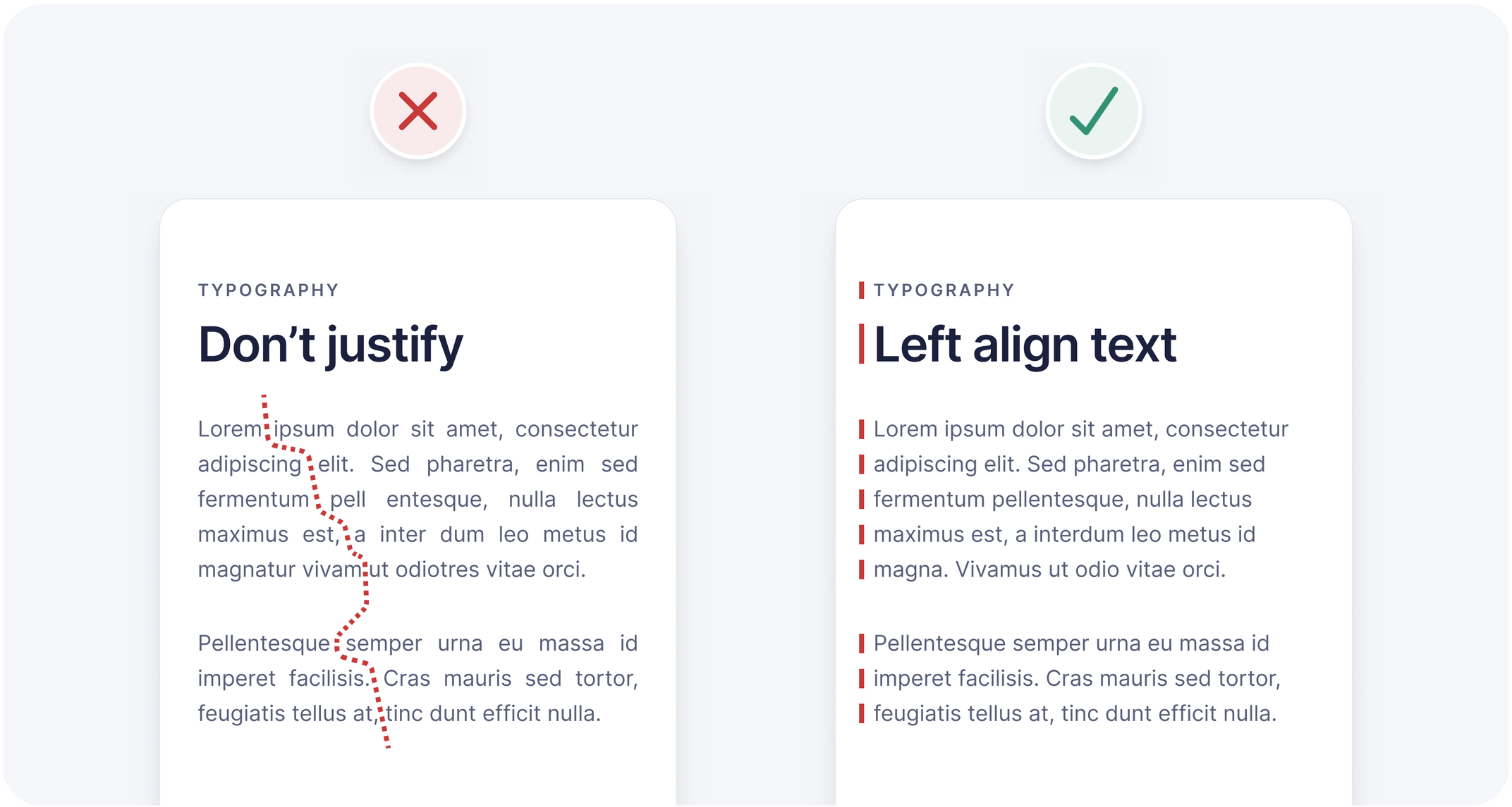
Example of centre aligned versus left aligned text

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Don’t justify long body text

Books often justify text for aesthetics, ironically making them harder to read. The variations in letter and word spacing make it harder for your eyes to distinguish text and follow lines (especially for those with cognitive impairments like dyslexia).

The variations in spacing also create distracting “rivers” of white space, highlighted in the following example.



Example of justified versus left aligned text

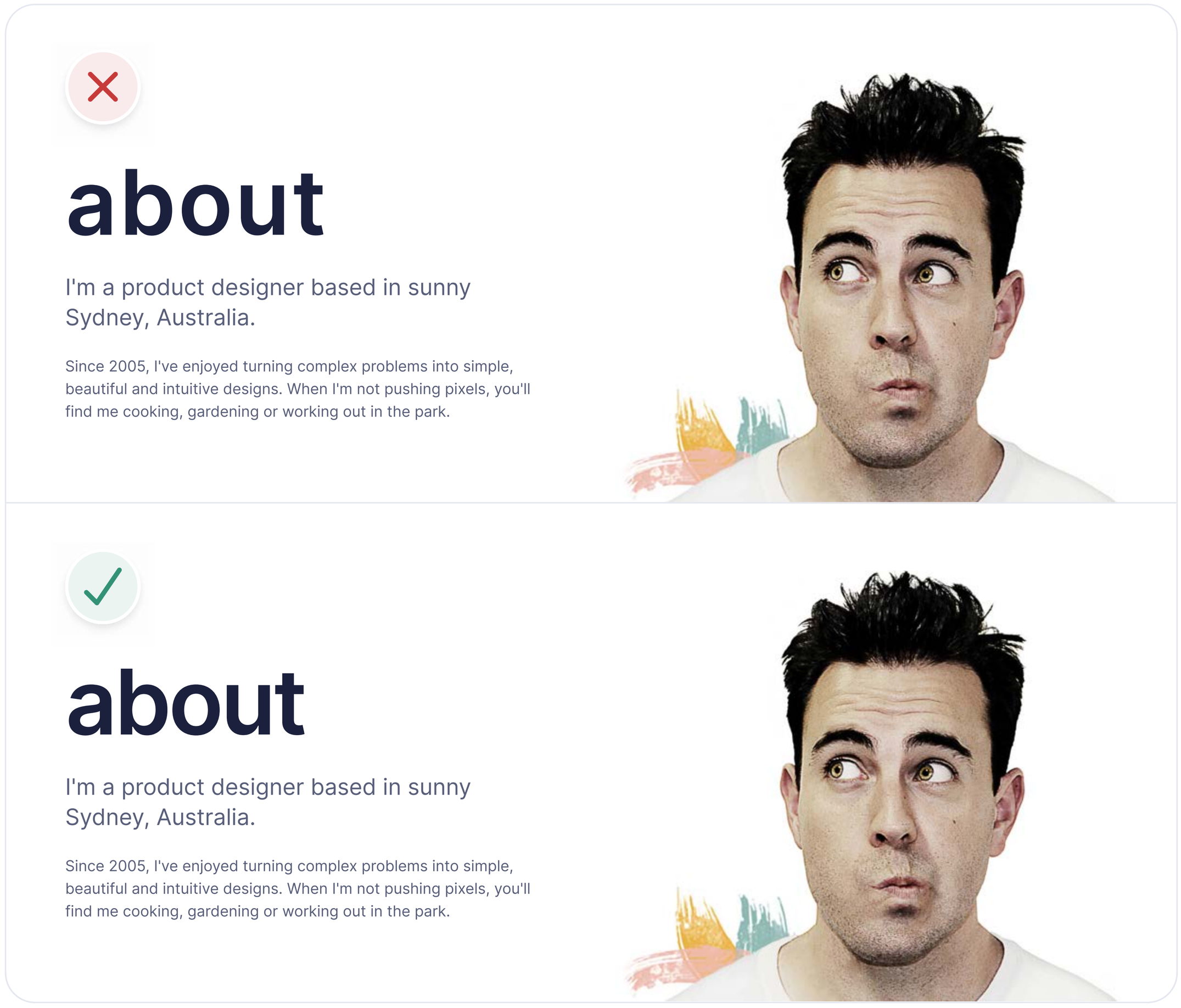
Left aligned text is the easiest to read. Each line starts along the same left edge, giving your eyes a consistent anchor to quickly jump back to at the end of the line.

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Decrease letter spacing for large text

A small trick to make large headings look better is to decrease their letter spacing (space between letters). How much you decrease letter spacing depends on the typeface and size, but generally, you'll want to decrease letter spacing more as text gets bigger.

This is because many typefaces were designed to be read at small sizes in long body text. They're known as "text type" typefaces and have wide letter spacing to make them more legible at small sizes. You probably won't need to decrease letter spacing for "display type" typefaces, as they were designed to be used at large sizes and generally have closer letter spacing.



Example of a heading with regular letter spacing versus one with decreased letter spacing

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Ensure text on photos is legible

Placing text directly on photos is a very common design mistake. Depending on the photo, this can make text illegible, especially to people with low vision. Ensure the contrast ratio of text placed on photos meets WCAG 2.1 level AA accessibility requirements:

- **Small text** (18px and under) should have a contrast ratio of at least 4.5:1.
- **Large text** (above 18px with bold weight or above 24px with regular weight) should have a contrast ratio of at least 3:1.

In the following example, white text is placed directly on the photo making it difficult to read.



Example of illegible white text placed directly on a photo

Here are some simple options you can use to ensure your text is always accessible on photos.

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Add a linear gradient overlay

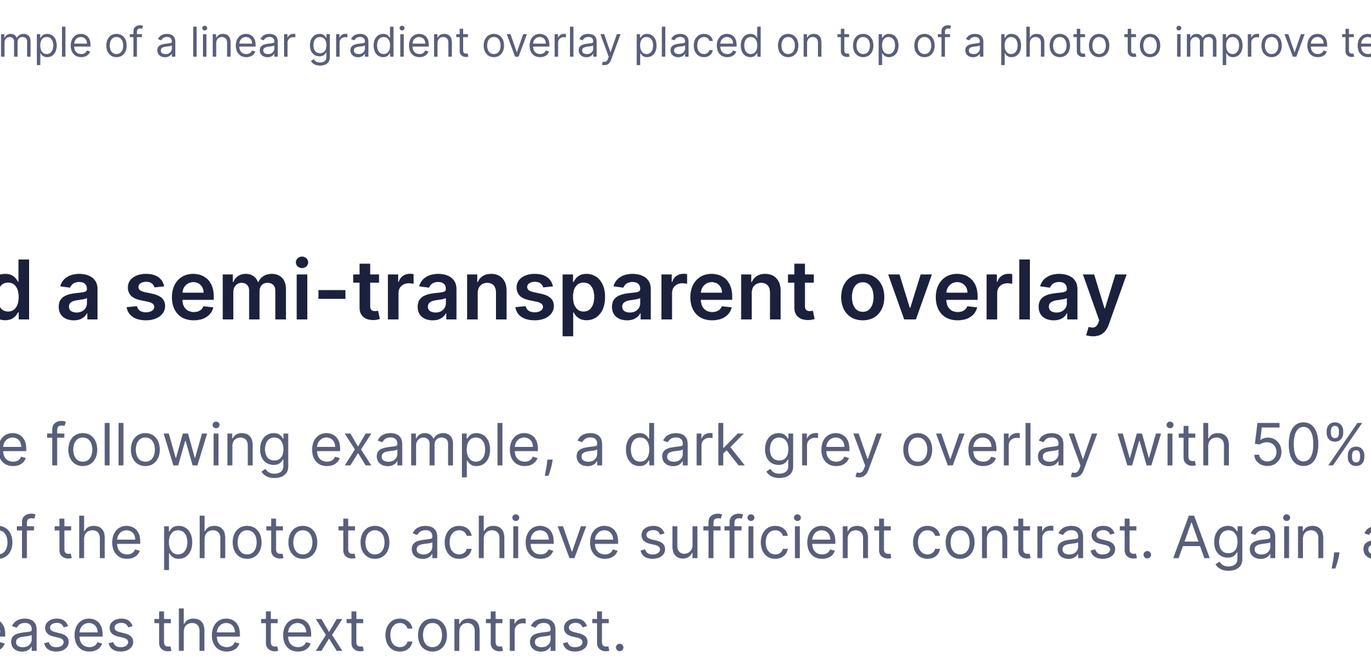
In the following example, a linear gradient overlay is placed behind text to achieve sufficient contrast. The gradient starts with a dark grey colour at 90% opacity at the bottom of the photo and ends with 0% opacity halfway up the photo. A text shadow further increases the text contrast.



Example of a linear gradient overlay placed on top of a photo to improve text legibility

Add a semi-transparent overlay

In the following example, a dark grey overlay with 50% opacity is placed on top of the photo to achieve sufficient contrast. Again, a text shadow further increases the text contrast.

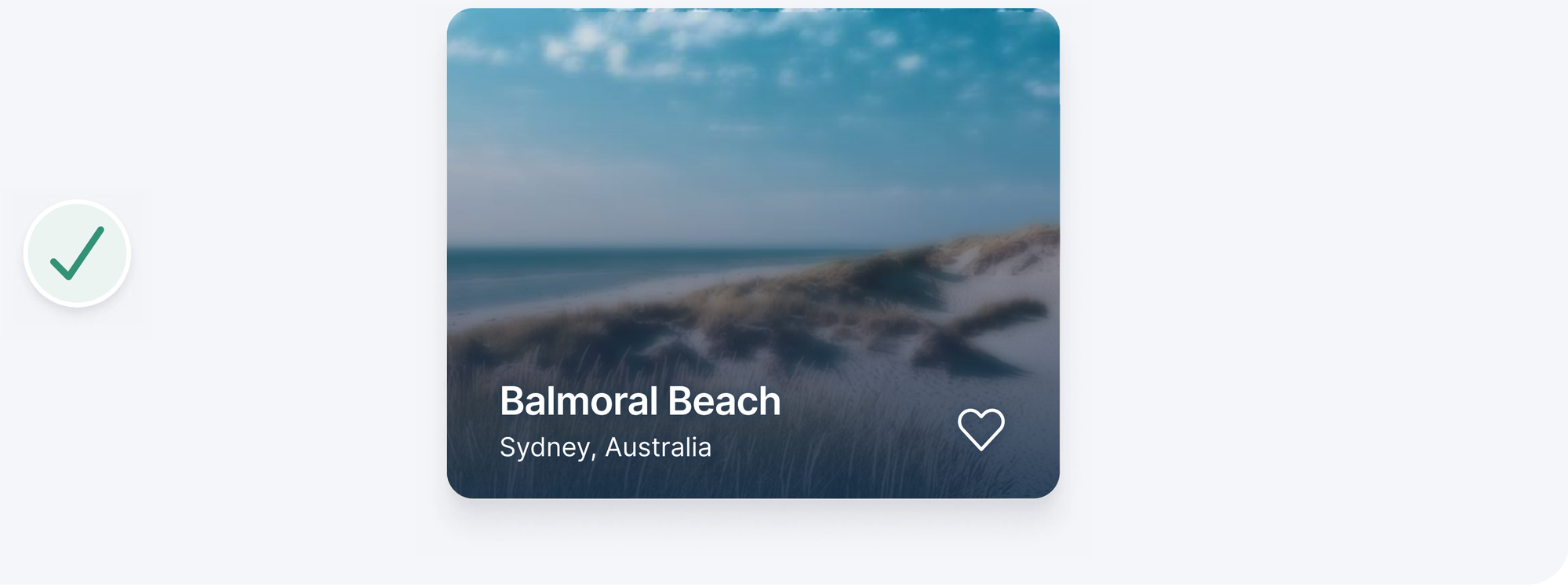


Example of a semi-transparent overlay placed on top of a photo to improve text legibility

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Add a blurred semi-transparent overlay

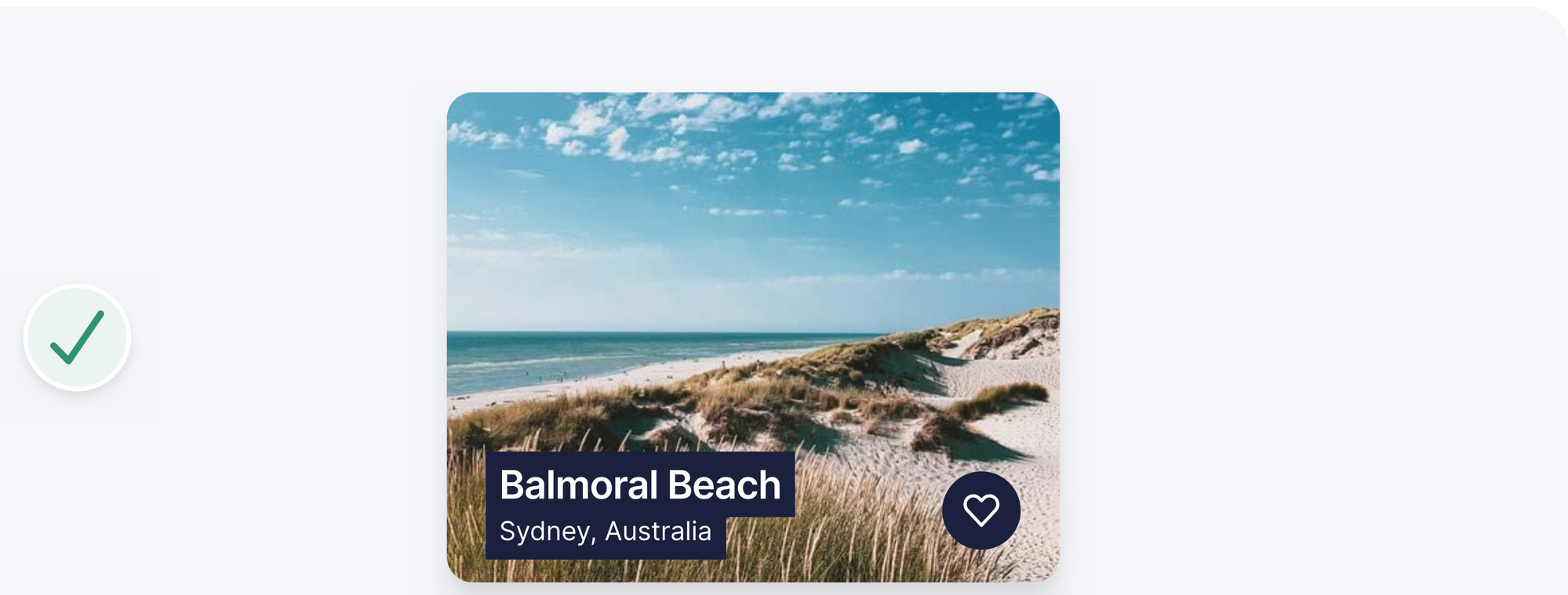
You could also add a blur to the semi-transparent overlay to make the text easier to read.



Example of a blurred semi-transparent overlay placed on top of a photo to improve text legibility

Apply a solid text background

A popular approach for video captions is to apply a solid background behind text to ensure text has sufficient contrast. Try using white text on a dark grey background.

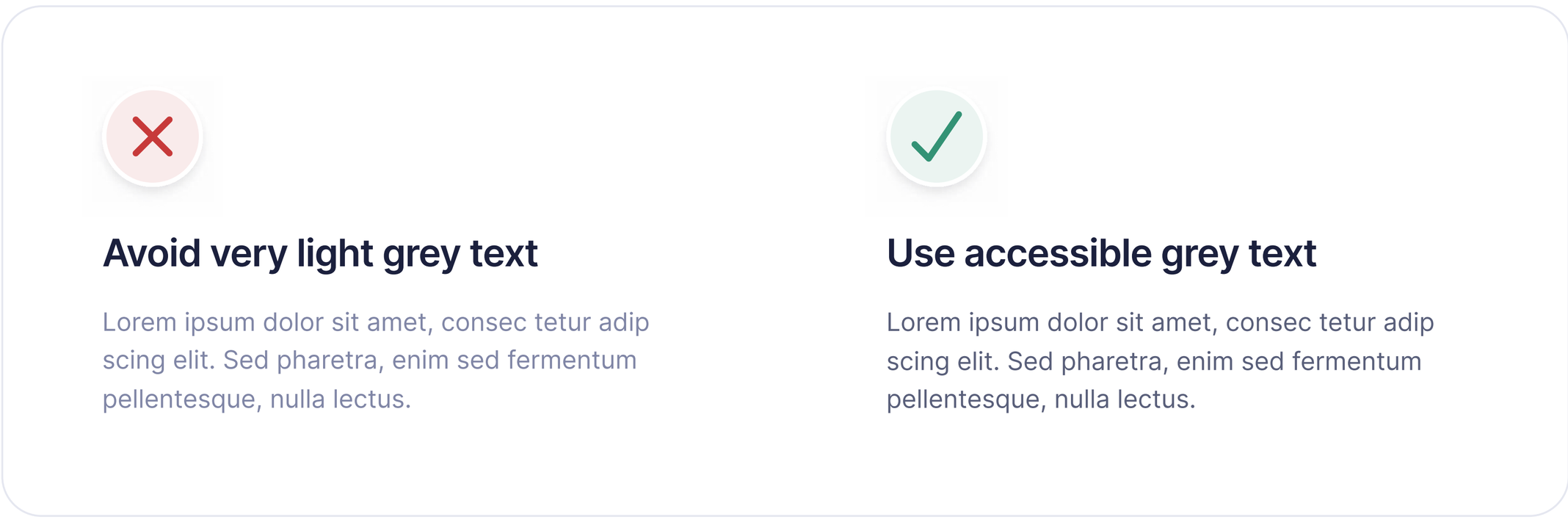


Example of a solid background applied behind text to improve legibility on photos

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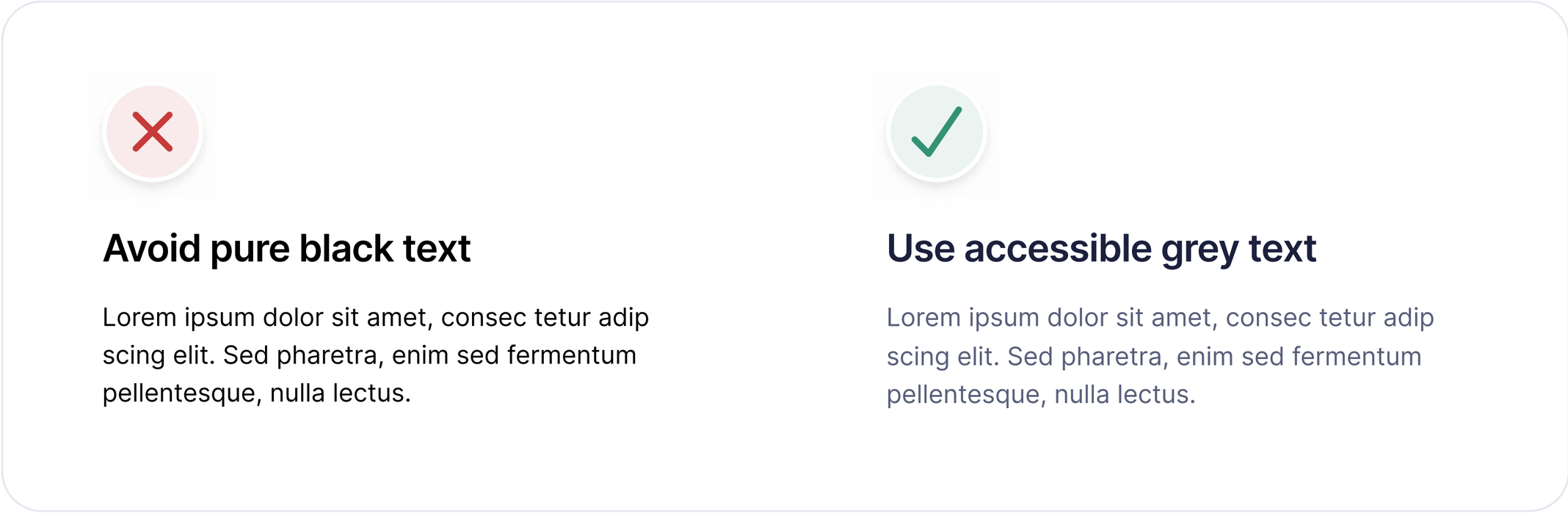
Avoid light grey and pure black text

Designers tend to be drawn to light grey text, as it can look soft and minimal. However, this poses an accessibility issue, as many people either can’t read it or find it difficult to do so. Always aim for text to have at least a 4.5:1 contrast ratio to meet WCAG 2.1 level AA accessibility requirements.



Example of inaccessible light grey text versus accessible dark grey text

You also need to avoid contrast that’s too high, as it can cause eye strain and fatigue. Black has 0% colour brightness and white has 100% colour brightness. The large difference in colour brightness causes our eyes to work harder. So it’s safest to avoid pure black text on a white background and opt for an accessible dark grey instead.



Example of pure black text versus accessible dark grey text

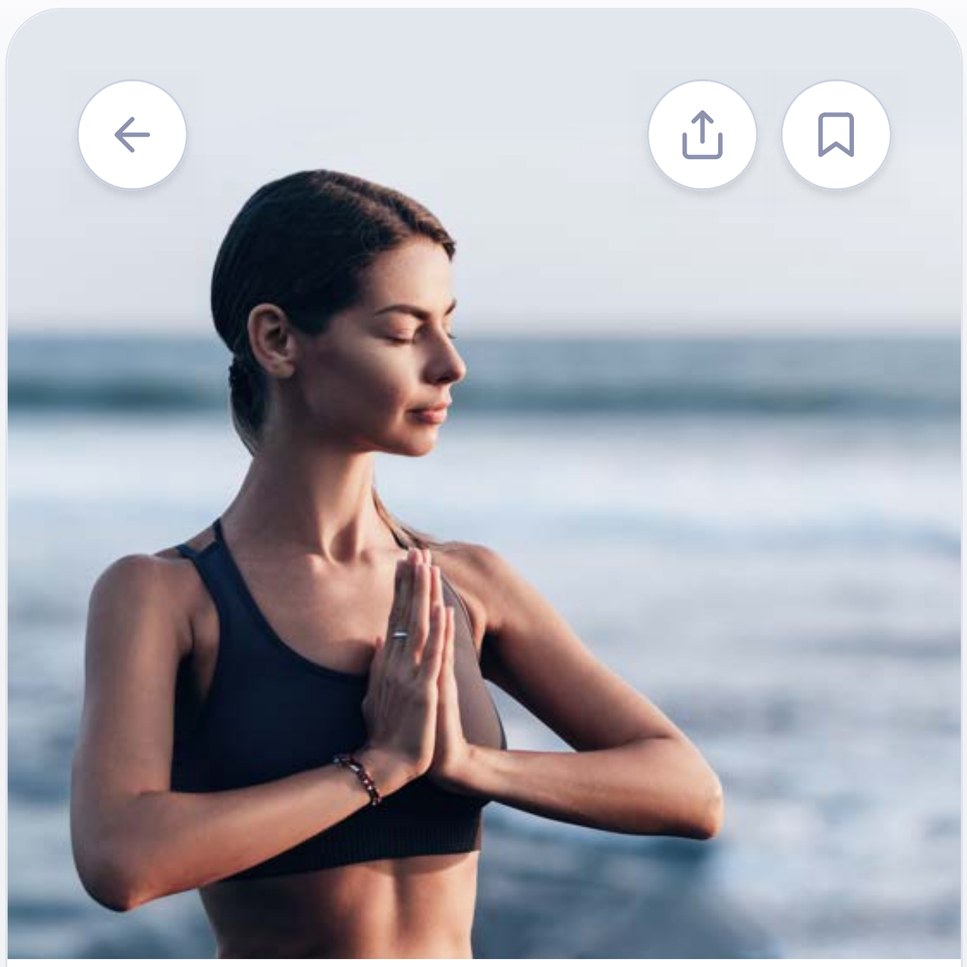
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TUTORIAL - TYPOGRAPHY

Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off



Morning Yoga Workout

WITH BROOKLYN SIMS

5.0 (23 reviews)

20 mins | Beginner | Ambient | None

Escape the stresses of quotidian existence with this harmonious fusion of contemplative pranayama techniques and corporeal postures. You will feel rejuvenated and ready to take on the day.

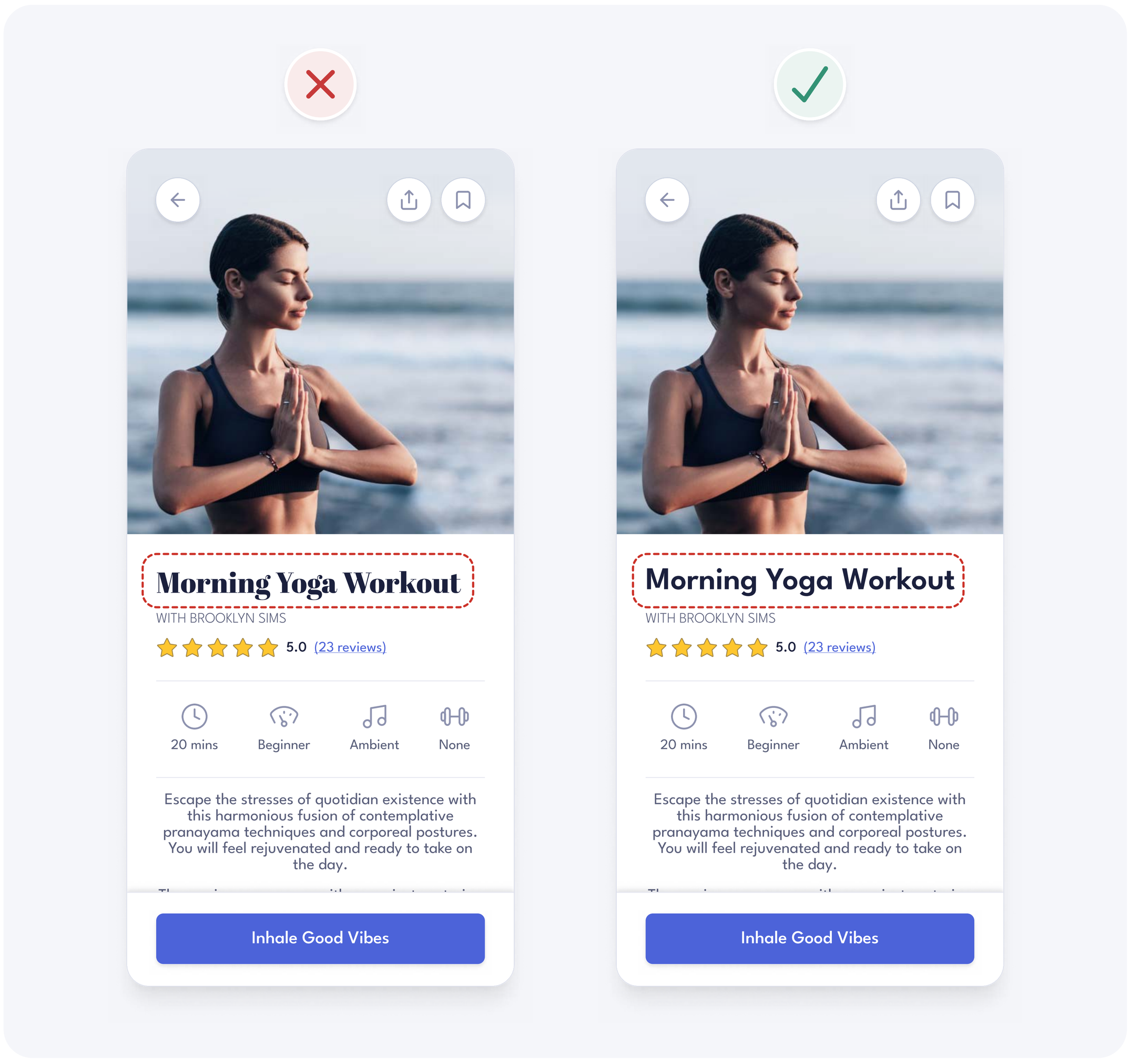
Inhale Good Vibes

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Use a single sans serif typeface

It’s safest to use a single sans serif typeface for interface design, as they’re generally the most legible, neutral, and simple.

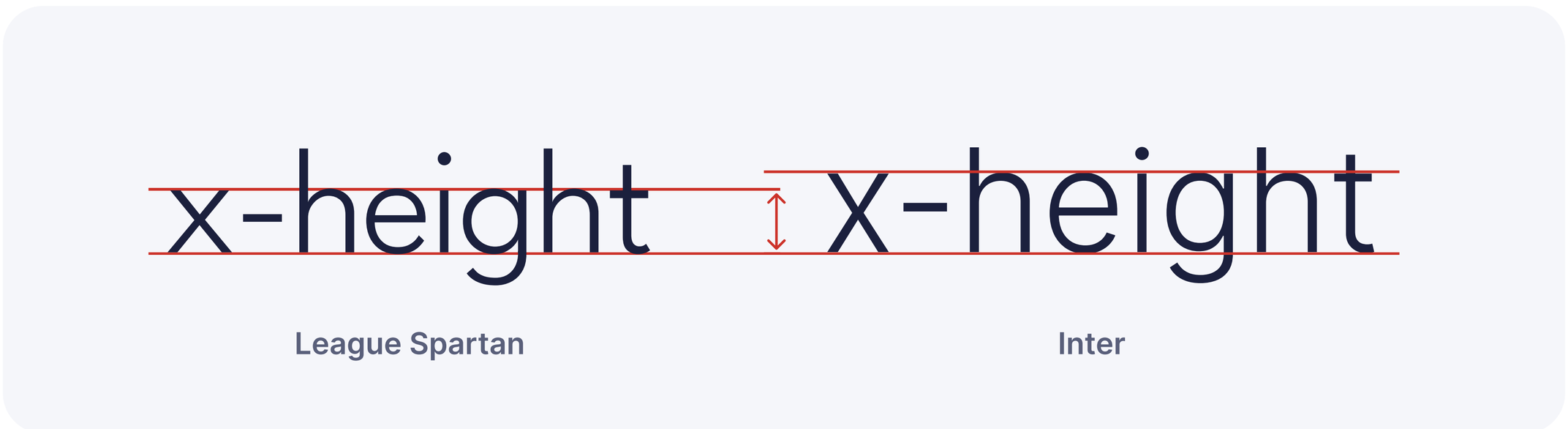
In the fitness app example, the heading uses a detailed serif typeface that’s a bit difficult to read and could be distracting for some. It also has a personality that might not match some content in the app. Simplifying the heading to a sans serif typeface can help improve usability and aesthetics. Let’s change the heading to match the typeface used elsewhere on the interface. Now we have a single sans serif typeface, but is it the most suitable option?



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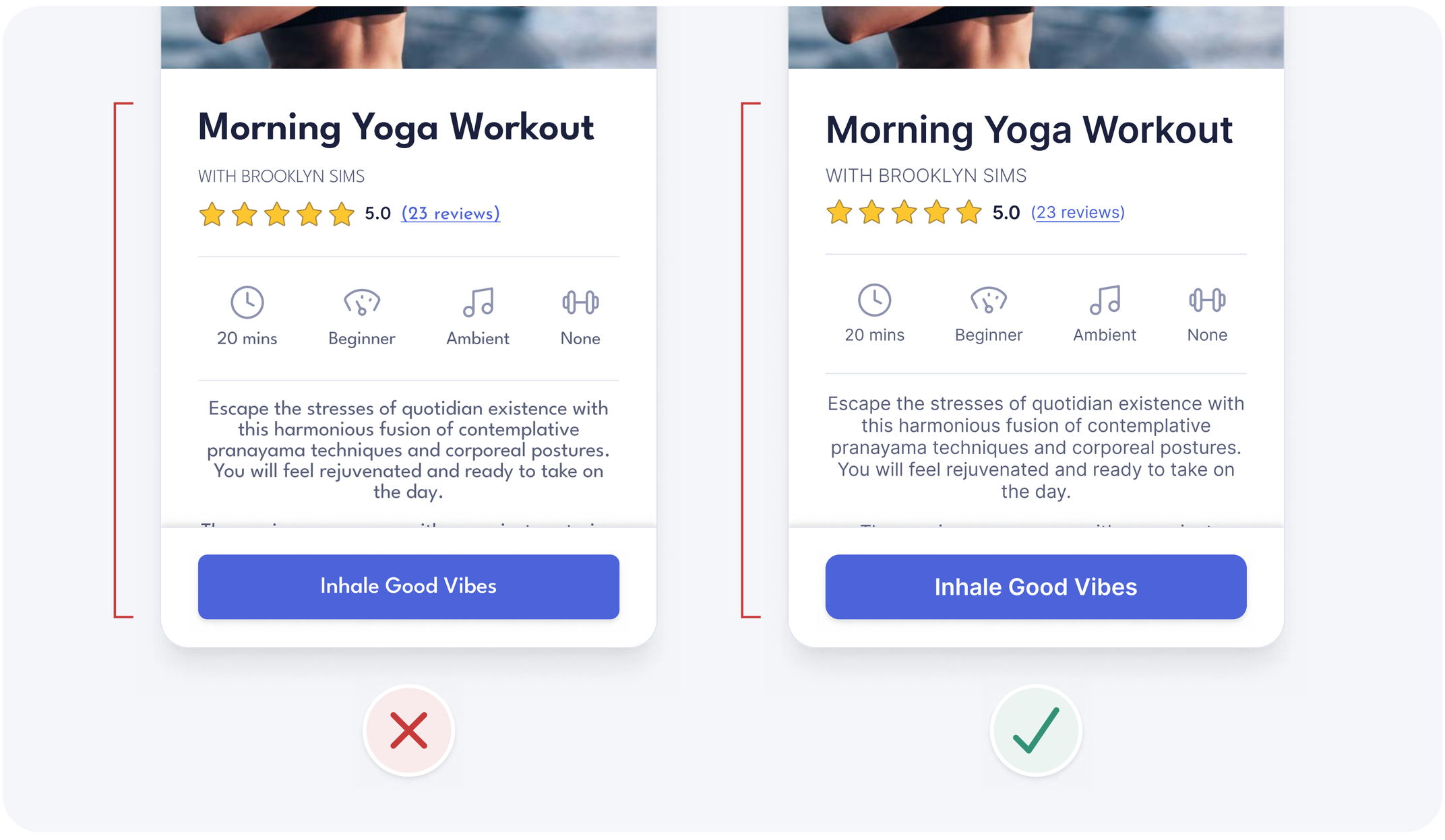
Use a typeface with taller lower case letters

Look for typefaces with taller lower case letters and greater letter spacing, as they’re generally more legible at small sizes. The height of lowercase letters in a typeface is known as the x-height.



Comparison of the x-height of League Spartan and Inter typefaces

The fitness app example uses the League Spartan typeface, which has a relatively low x-height. Changing the typeface to one with a larger x-height, like Inter, helps to improve readability.



Typeface is changed to one with a larger x-height

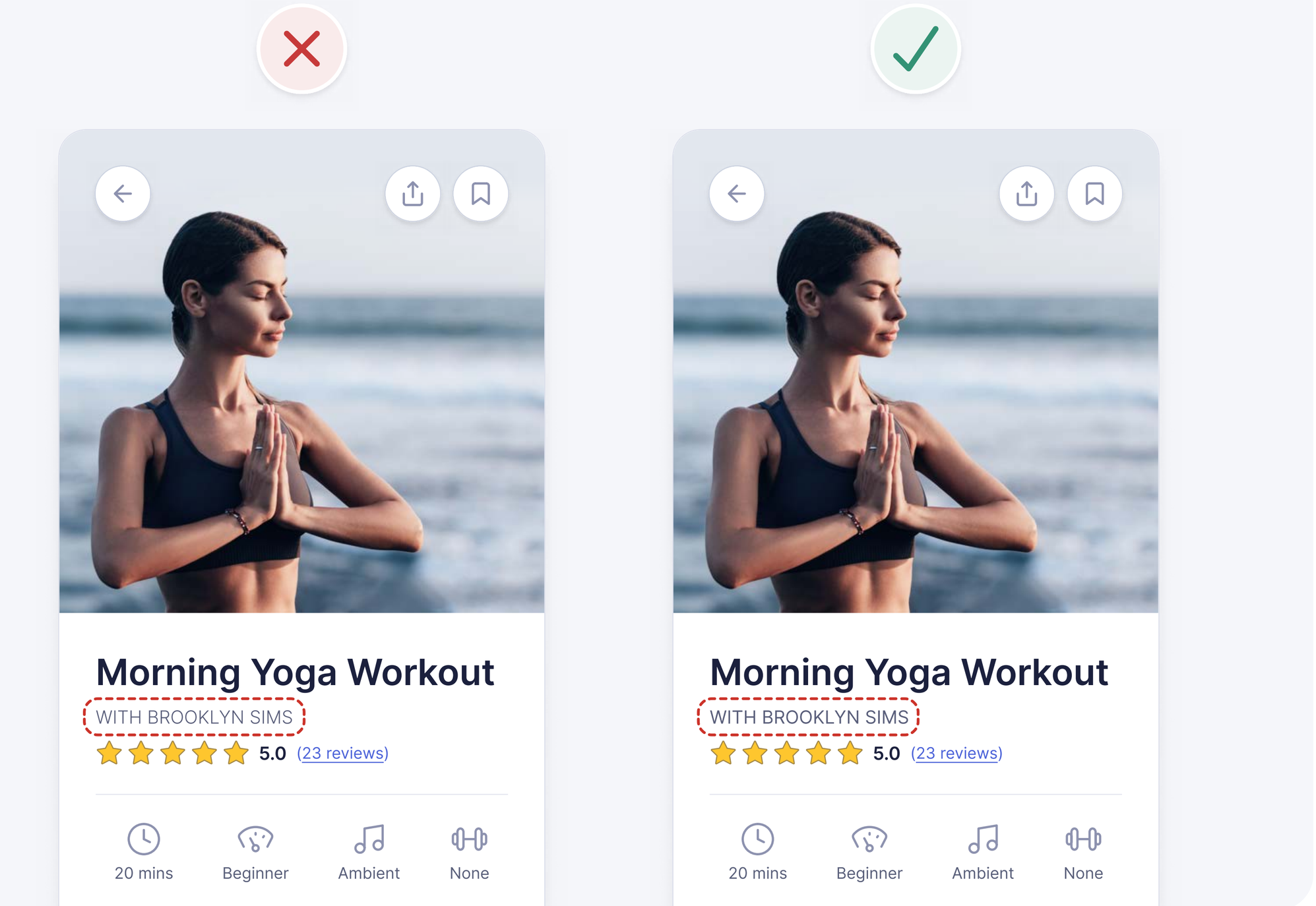
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Use regular and bold font weights only

In the fitness app example, the text for the instructor's name uses a light font weight. You've already increased the colour contrast above the required 4.5:1 contrast ratio, but the thin characters could still be difficult for some people to read, especially at a small size. Increasing the font weight to regular helps improve readability and simplifies the design.



Comparison of light and regular font weights

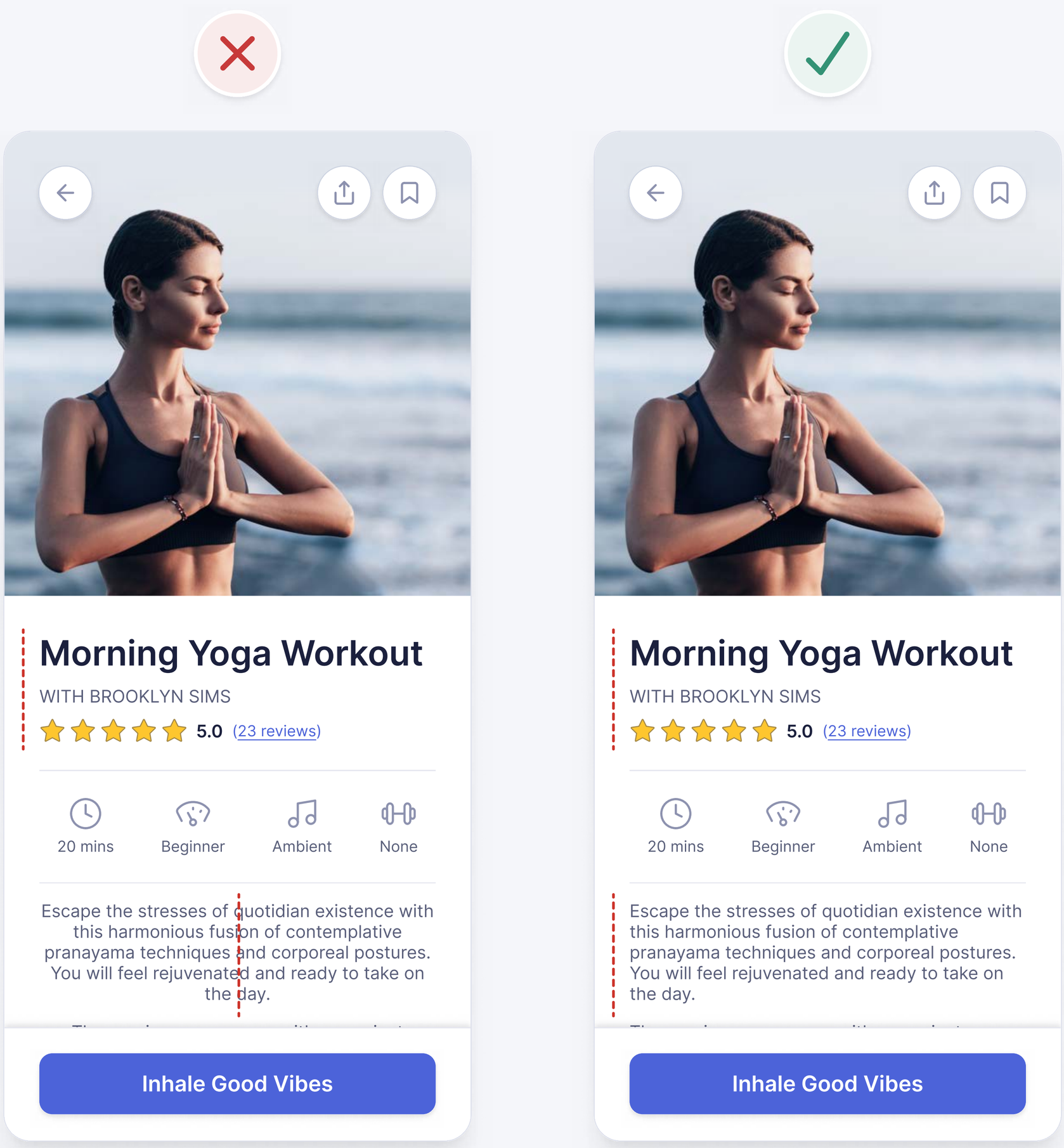


Light font weight is increased to regular to improve legibility

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Left align text

In the fitness app example, the block of body text is centre aligned. Left aligning the text improves readability and is also consistent with the left aligned text that sits above it.

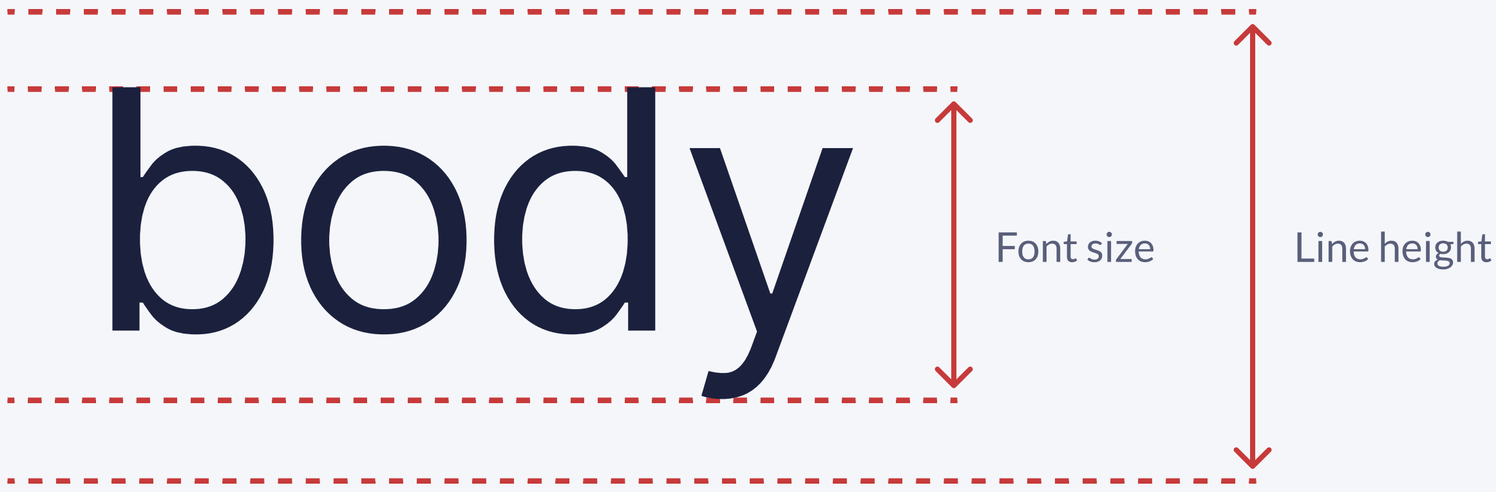


All text is left aligned to improve readability and consistency

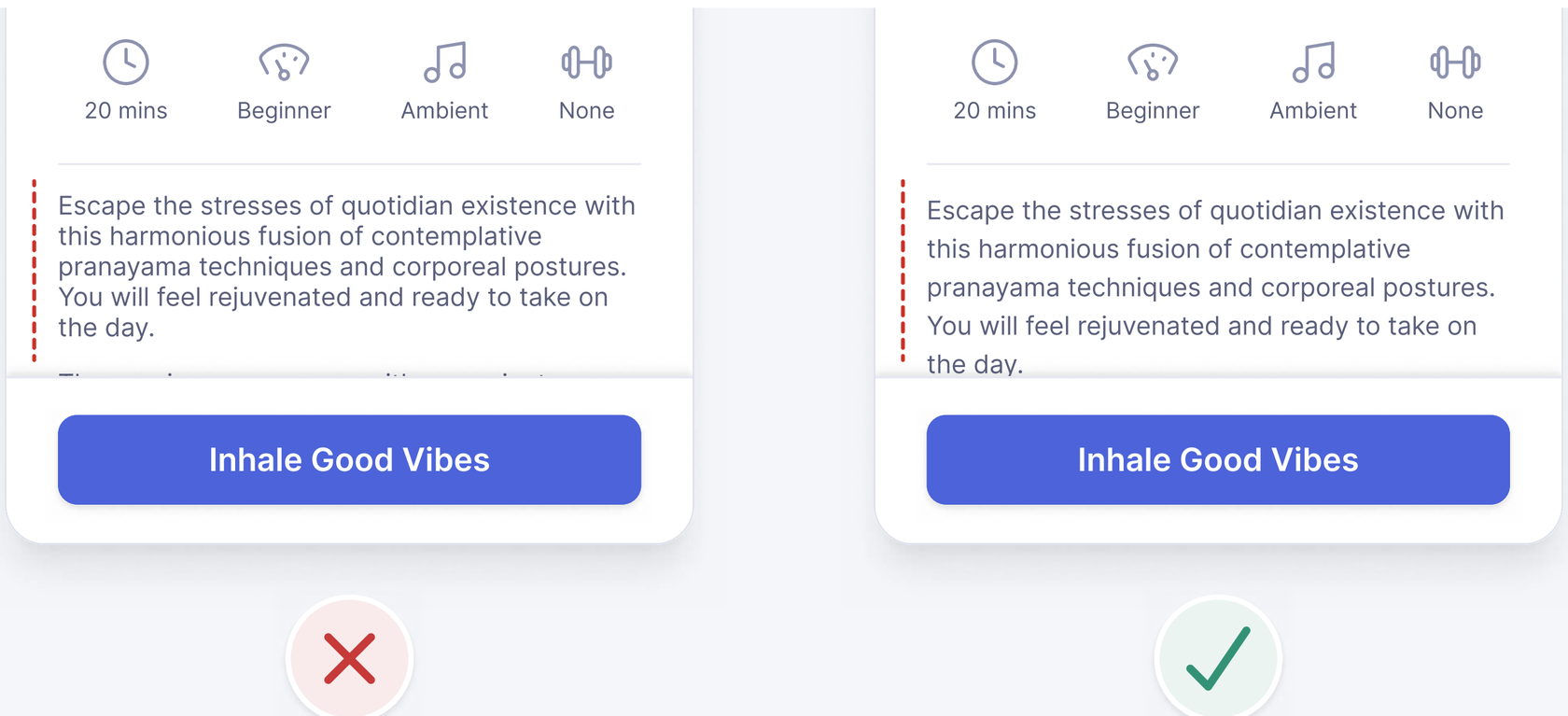
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Use at least 1.5 line height for body text

In the fitness app example, the line height of the block of body text is only 1 (100%). Increasing it to 1.5 (150%) helps to improve readability.



Line height is the vertical distance between two lines of text



Line height is increased from 1 to 1.5 to improve readability

Nice one. We’re nearly there. Our example fitness app is looking much better after applying a few logical guidelines. How text looks can make a big difference to your interface designs, but so can the words themselves. We’ll look at the words in the next chapter.

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Chapter summary

- Limit typography styles to regular and bold font weights in a single sans serif typeface to improve legibility, neutrality, and simplicity.
- Use a type scale to create a small set of predefined font sizes that work well together.
- Use a line height of at least 1.5 for long body text to improve readability. Decrease line height as font size increases.
- Ensure text is 40 - 80 characters per line (including spaces) to improve readability. If lines are too long, it makes it harder for people to gauge where the line starts and ends.
- Left align text for optimal readability, as English is read from left to right, downwards in an F-shaped pattern.

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Your progress

5 of 8 chapters completed

1. Fundamentals
2. Less is more
3. Colour
4. Layout and spacing
5. **Typography**
6. Copywriting
7. Buttons
8. Forms

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CHAPTER 6

Copywriting

Practical guidelines on how to write interface text that clearly communicates with people

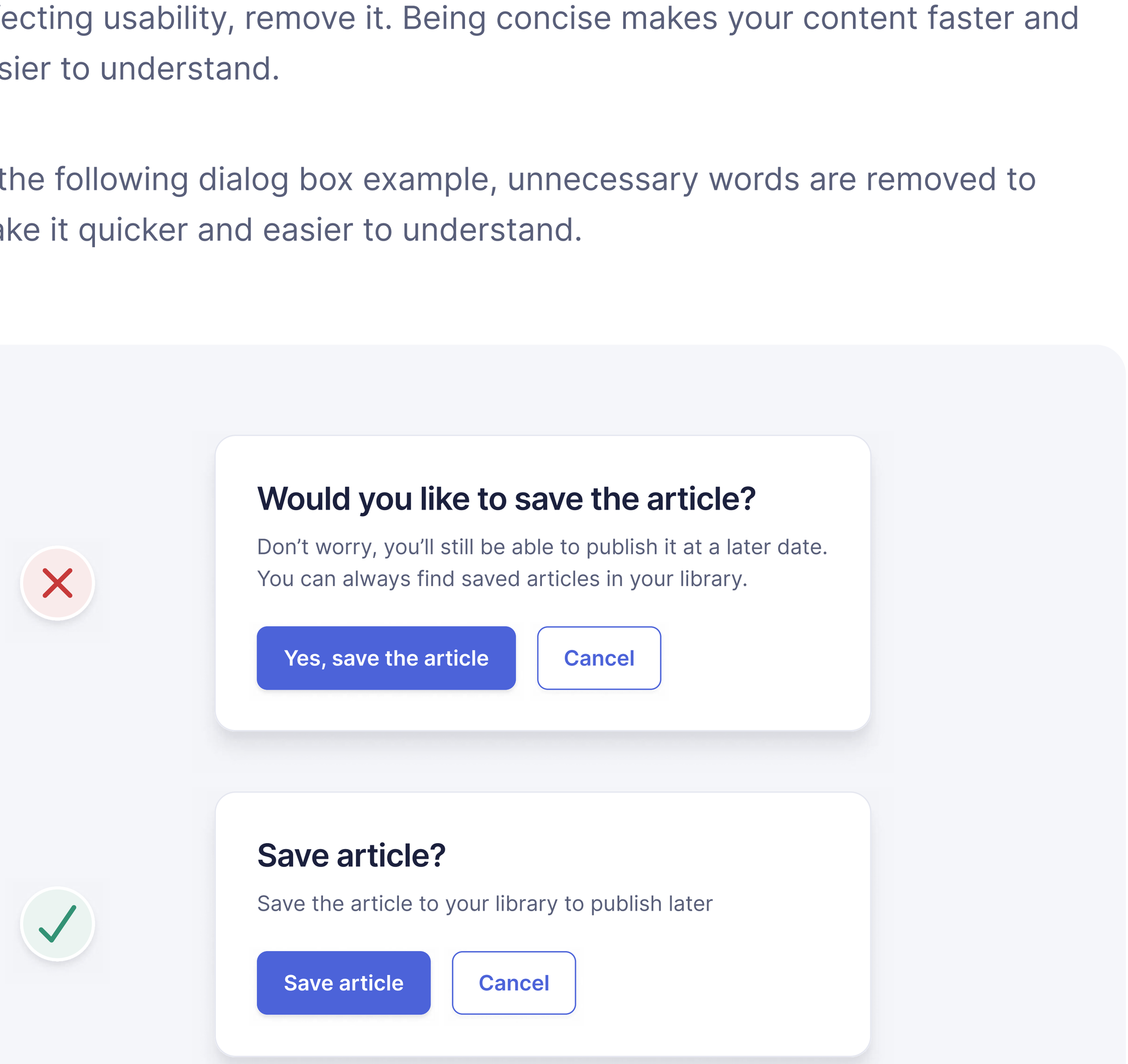
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Be concise

Every element of your interface should earn its place, especially the words. Ironically, more words don’t necessarily result in more effective communication, as people often won’t read large chunks of text.

Our attention spans are shorter than ever, so aim to say more, with fewer words. If a word can be removed without losing information or negatively affecting usability, remove it. Being concise makes your content faster and easier to understand.

In the following dialog box example, unnecessary words are removed to make it quicker and easier to understand.



Example of unnecessary text versus concise text

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Some guidelines on how to be concise:

- Avoid unneeded words like: “actually”, “basically”, “really”, “truthfully”, and “quite”.
- Avoid short joining words like: “a”, “an”, and “the”.
- Avoid introductory phrases like: “would you like to”, “in order to”, “when it comes to”, “are you sure”, "there are" and "it is".
- Use shorter words instead of longer ones if they convey the same message.
- Try to keep sentences under 20 words. People can lose focus when reading long sentences with a lot of commas.

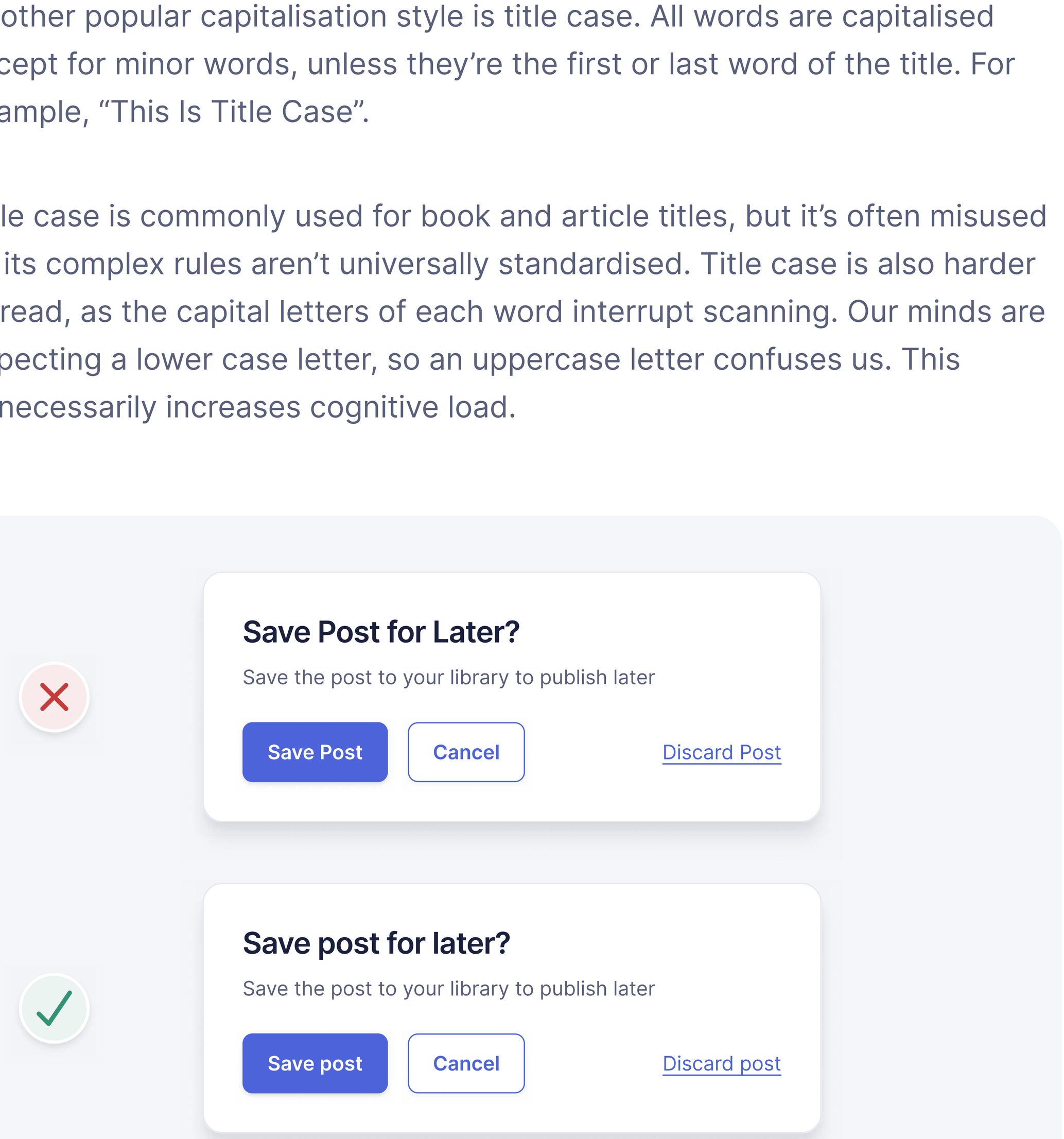
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Use sentence case

Sentence case is where only the first word and proper nouns (names of people, places or things) are capitalised. For example, “This is sentence case”. It’s super simple, easy to read, and grammatically correct.

Another popular capitalisation style is title case. All words are capitalised except for minor words, unless they’re the first or last word of the title. For example, “This Is Title Case”.

Title case is commonly used for book and article titles, but it’s often misused as its complex rules aren’t universally standardised. Title case is also harder to read, as the capital letters of each word interrupt scanning. Our minds are expecting a lower case letter, so an uppercase letter confuses us. This unnecessarily increases cognitive load.



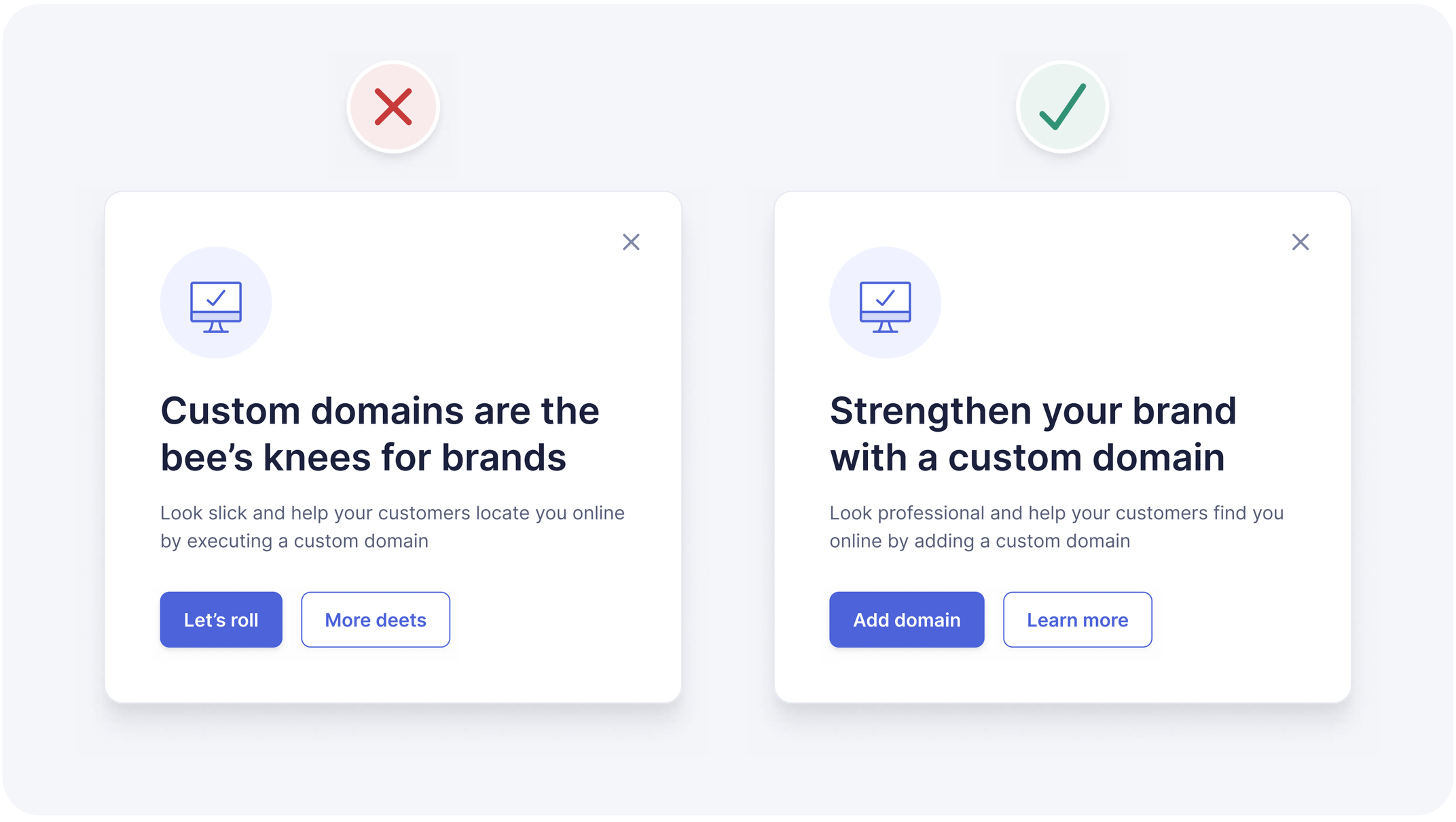
Example of title case versus sentence case

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Use plain and simple language

Many people have trouble reading and some may have mental disabilities. Keep your language simple and conversational to make it easier for a broader range of people to understand. Here are some quick tips:

- Imagine that you’re having a conversation with a 6th grade student who’s unfamiliar with the topic.
- Avoid jargon (specialised or technical language that’s only understood by particular groups of people).
- Avoid slang (very informal language used between people in the same social group).
- Choose short, simple words over long and complex ones.
- Use shortened words to sound more natural: who’s, they’re, you’re.



Example of complex versus simple language

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Front-load text

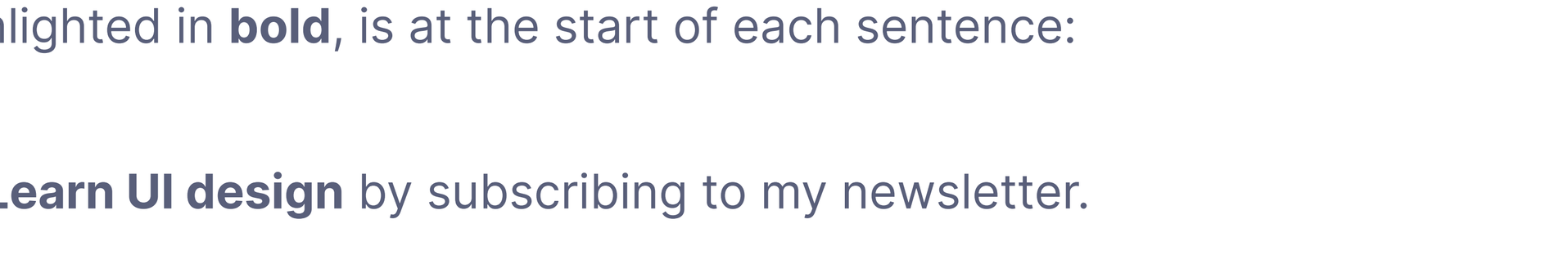
Front-loading is putting the important information at the start of your text. People quickly scan text down the page from left to right. Putting the key information or benefit at the front of your headings, lists, and links makes it faster and easier for people to gain value from your text.

The following examples aren’t front-loaded. Key information, highlighted in **bold**, is at the end of each sentence:

- Subscribe to my newsletter to **learn UI design**.
- Sign up today for **30% off**.
- You should read these **5 UI design eBooks**.

The same examples were rewritten to be front-loaded. Key information, highlighted in **bold**, is at the start of each sentence:

- **Learn UI design** by subscribing to my newsletter.
- **30% off** if you sign up today.
- **5 UI design eBooks** you should read.



Example of text without and with front-loading

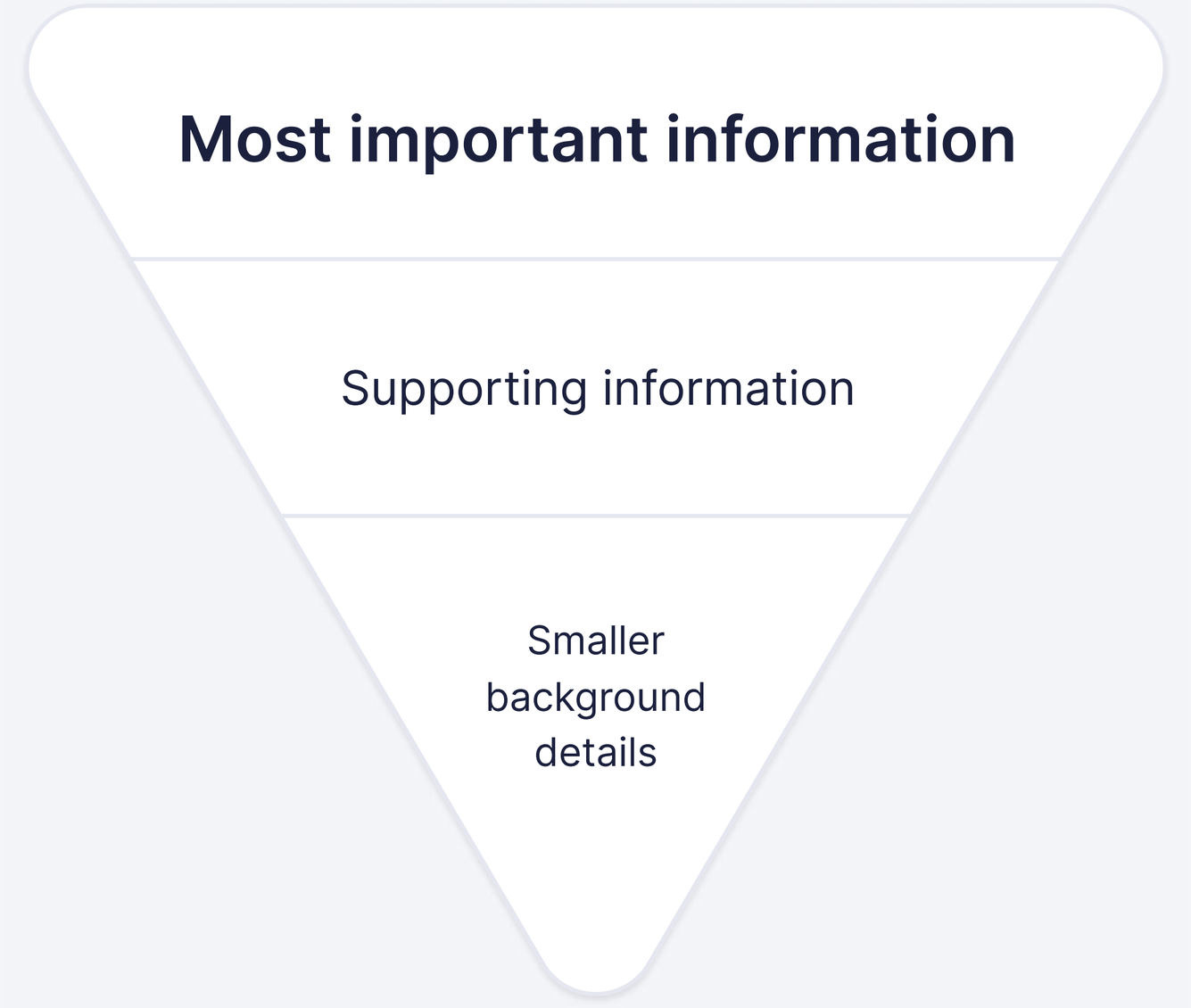
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Use the inverted pyramid

The inverted pyramid is a writing structure where the most important information is placed at the start, followed by supporting information and then smaller background details. It's a similar concept to front-loading text but it applies to larger pieces of text.

The inverted pyramid writing structure is popular in journalism and is also very effective for interface text for the following reasons:

- It gets to the point quickly, helping people understand information and make decisions faster.
- People who quickly skim the first sentence will still get the main point.
- Additional information is there for those who need it.

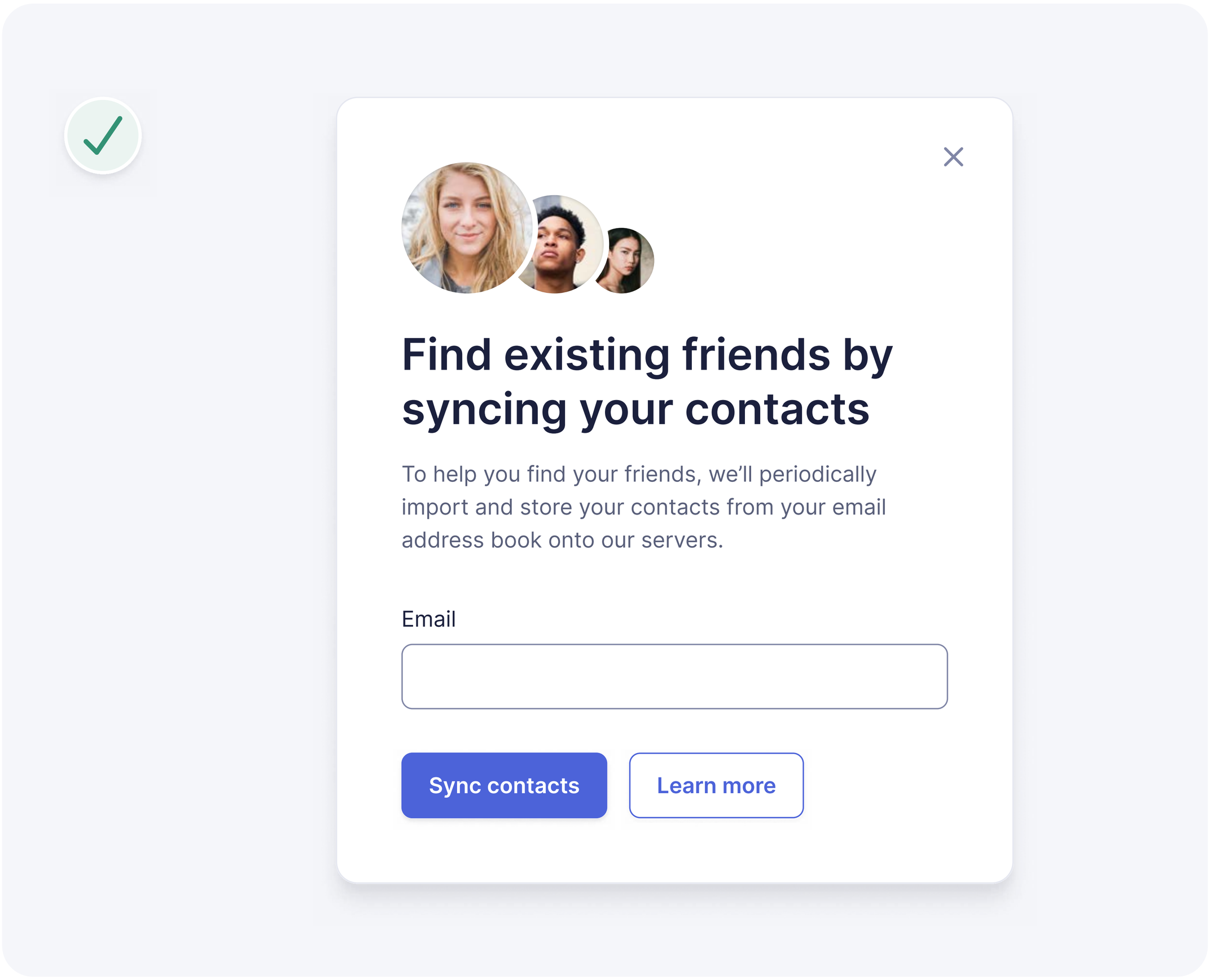


The inverted pyramid writing structure

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Here’s an example of the inverted pyramid:

- **The most important information** is contained in the heading to allow most people to complete the task without reading any other information.
- **Supporting information** is displayed under the heading for those who need a bit more detail.
- **Smaller background details** are moved to a separate screen as they’re less important and could add unnecessary complexity.



Example of the inverted pyramid in use

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Limit the use of abbreviations and acronyms

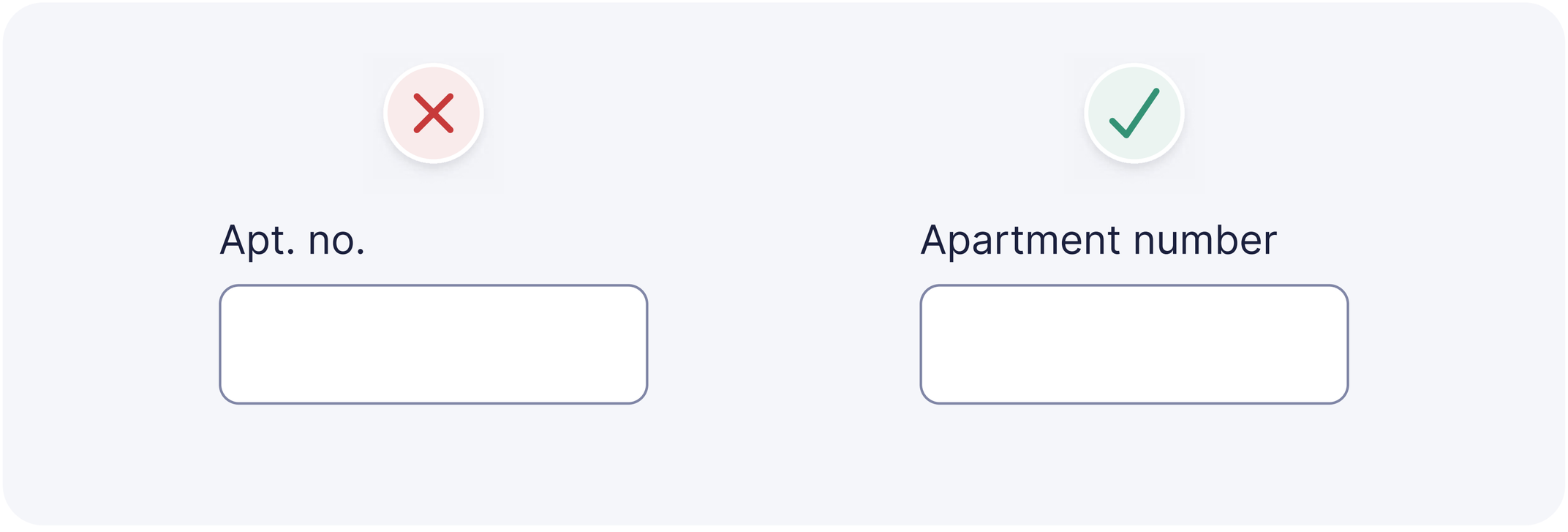
An abbreviation is a shortened form of a word or phrase. For example, the word “department” can be abbreviated to “dept.” to shorten it. An acronym is a common type of abbreviation formed from the initial letters of words. For example, “COB” stands for “close of business”.

Abbreviations can save space, but they make people think, which increases cognitive load. Limit the use of abbreviations to improve readability and reduce confusion. If you do use them, explain what they are initially.

“The ETA of the dept. manager is COB tomorrow”, could be unclear to some people. Instead, explain the acronyms when they’re first used, to make it clearer: “The ETA (estimated time of arrival) of the dept. manager is COB (close of business) tomorrow”.

Simplify it further by removing all abbreviations: “The estimated time of arrival of the department manager is close of business tomorrow”. The sentence is longer, but it’s clearer and faster for people to understand.

In the following form field example, avoiding abbreviations makes it clearer.



Example of a form field label with and without abbreviations

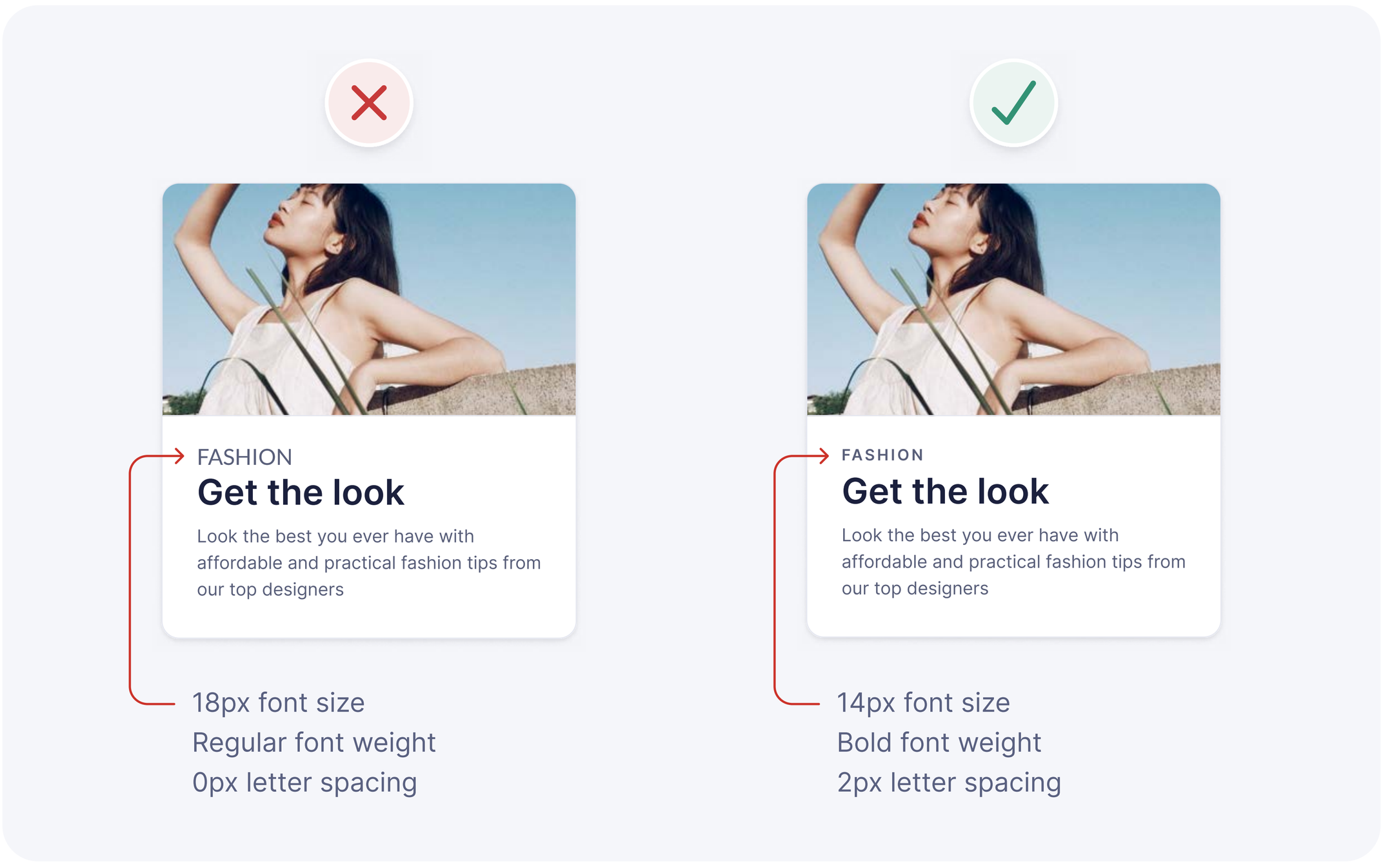
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Limit the use of UPPERCASE

Unless you’re shouting at people, there aren’t many valid reasons to use uppercase. IT’S LOUD AND DIFFICULT TO READ. When you read, you look at the shape of a word, rather than looking at each letter. The shape helps you recognise the word more quickly. Uppercase words all have the same rectangular shape. This forces you to read each letter one by one.



That being said, you can use uppercase for short labels to help visually differentiate them from other text. Use uppercase in bold weight at a small size and increase the letter spacing. This makes it less loud and more legible.

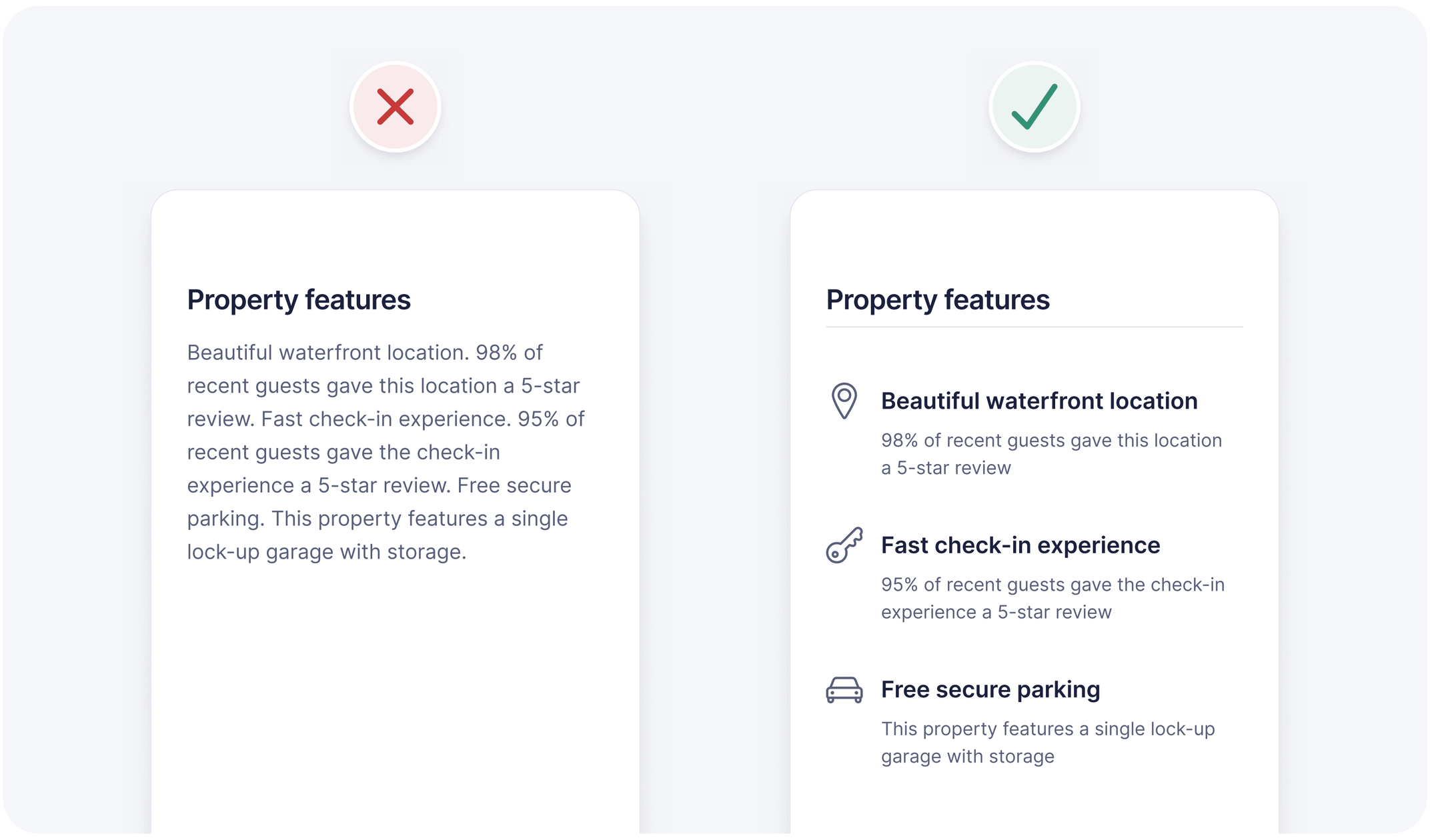


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Break up content using descriptive headings and bullets

Break up large pieces of information into multiple smaller ones. This makes it easier and faster for people to understand.

Highlight key information using descriptive headings. This allows people to quickly scan information and get a better idea of the structure and organisation of content.

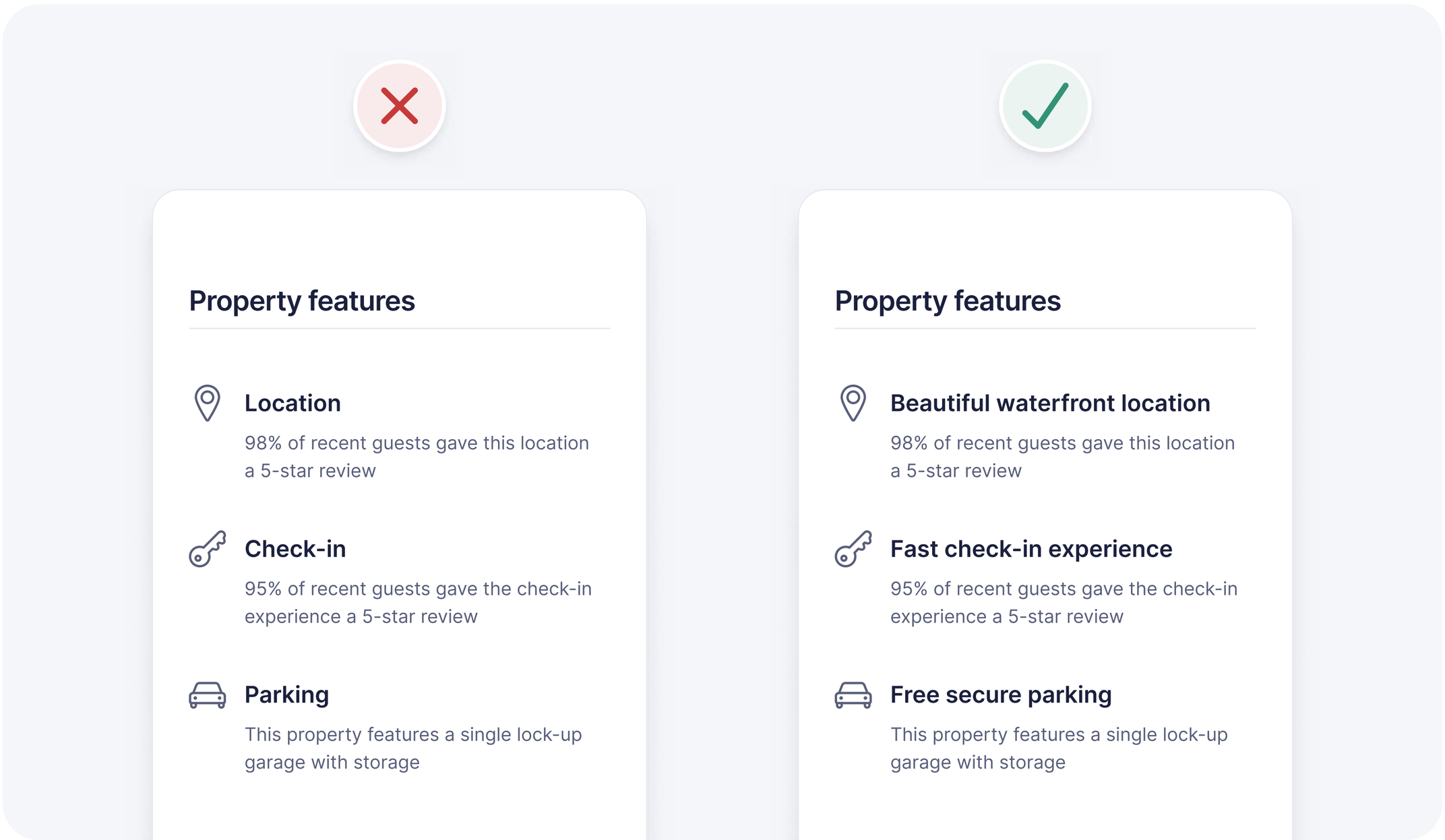


Example of content being broken up into separate groups with descriptive headings

Make sure headings are descriptive

It’s important to ensure headings are descriptive and convey key points for the following reasons:

- Many people quickly scan information and may not read supporting text as it takes more effort.
- Headings need to make sense when read out of context by those using screen readers. Screen reader users often listen to a list of all headings on a page and quickly skip to the information they’re after.



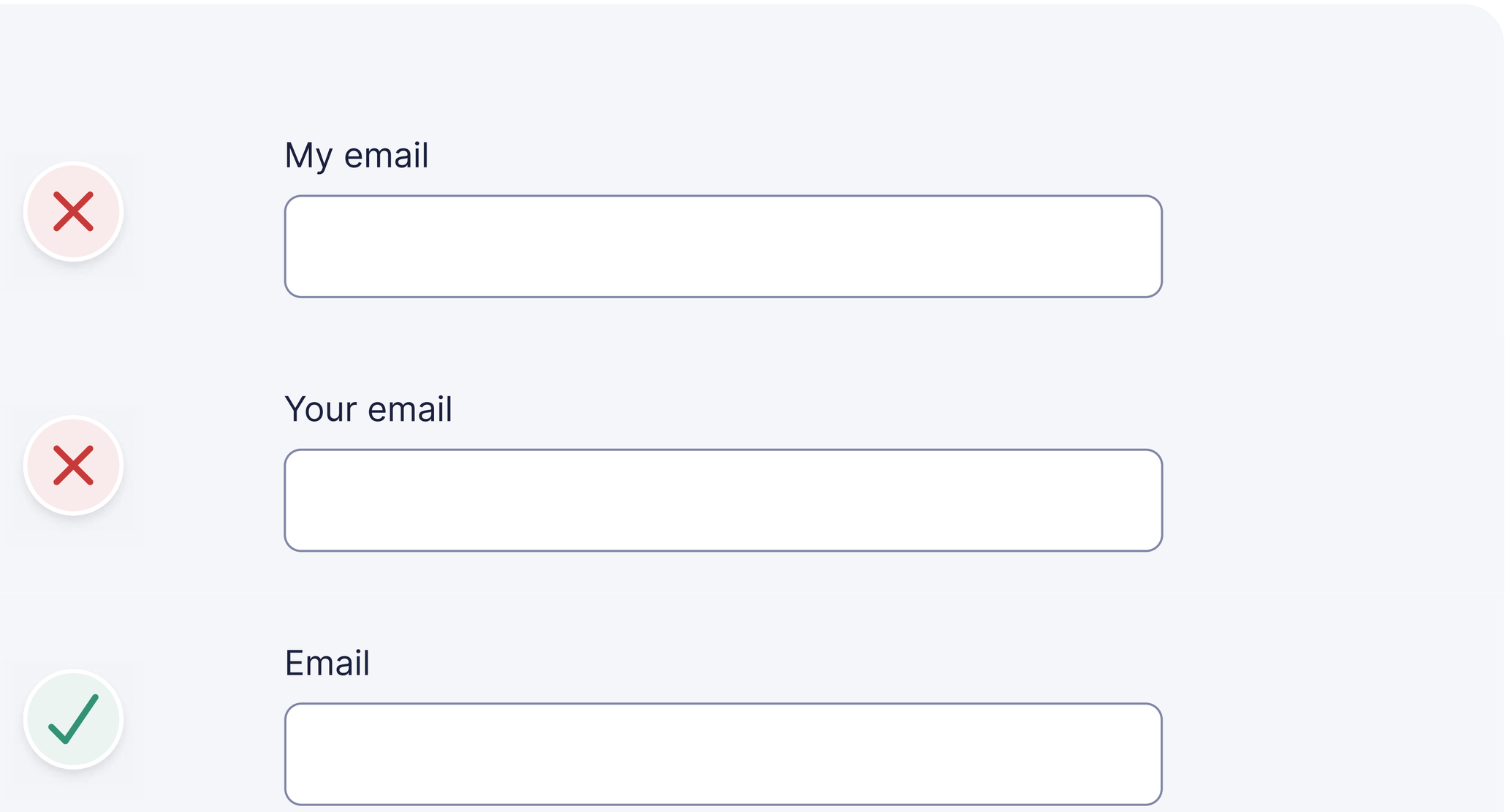
Example of vague versus descriptive headings

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Avoid using “my” on form labels

Avoid using the word “my” on form labels as it can be confusing. Think of the interface as a person who’s talking to the user. An input field labelled “my email address”, refers to the interface’s email address, rather than the user’s.

Using “your” is clearer, but unnecessary in most cases. Keep it simple and avoid using either “my” or “your” if possible. Being concise will also help declutter the interface.



Avoid using “my” or “your” on form labels

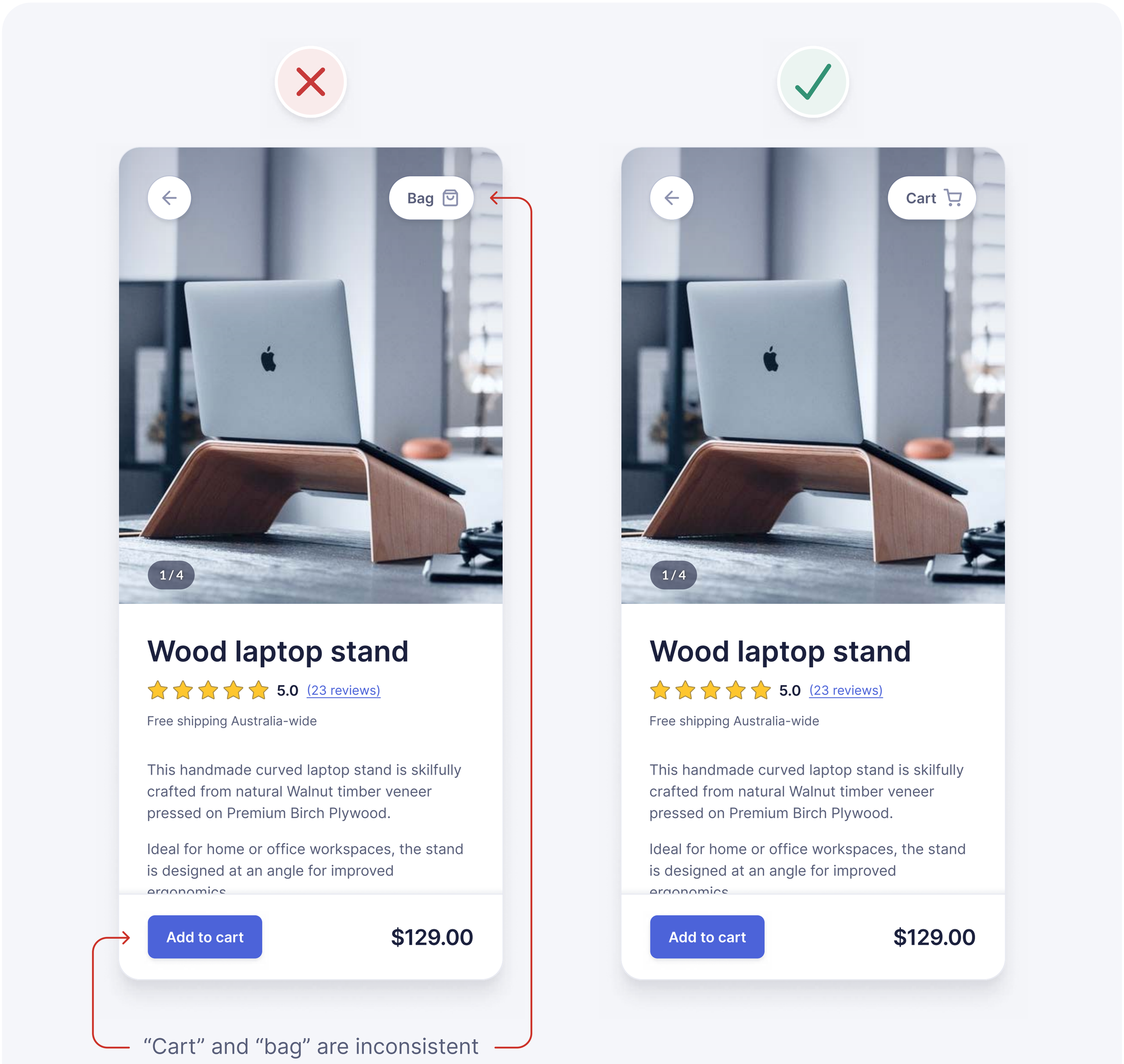
It can be even more confusing if you use both “my” and “your” throughout an interface, so always try to be consistent.

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Use vocabulary consistently

Similar interface elements should look and work similarly to reduce confusion. The same goes for words. Use the same word consistently to describe the same interface element.

For example, if the primary button on your product page is labelled “add to cart”, and your cart is labelled “bag”, this can cause confusion.

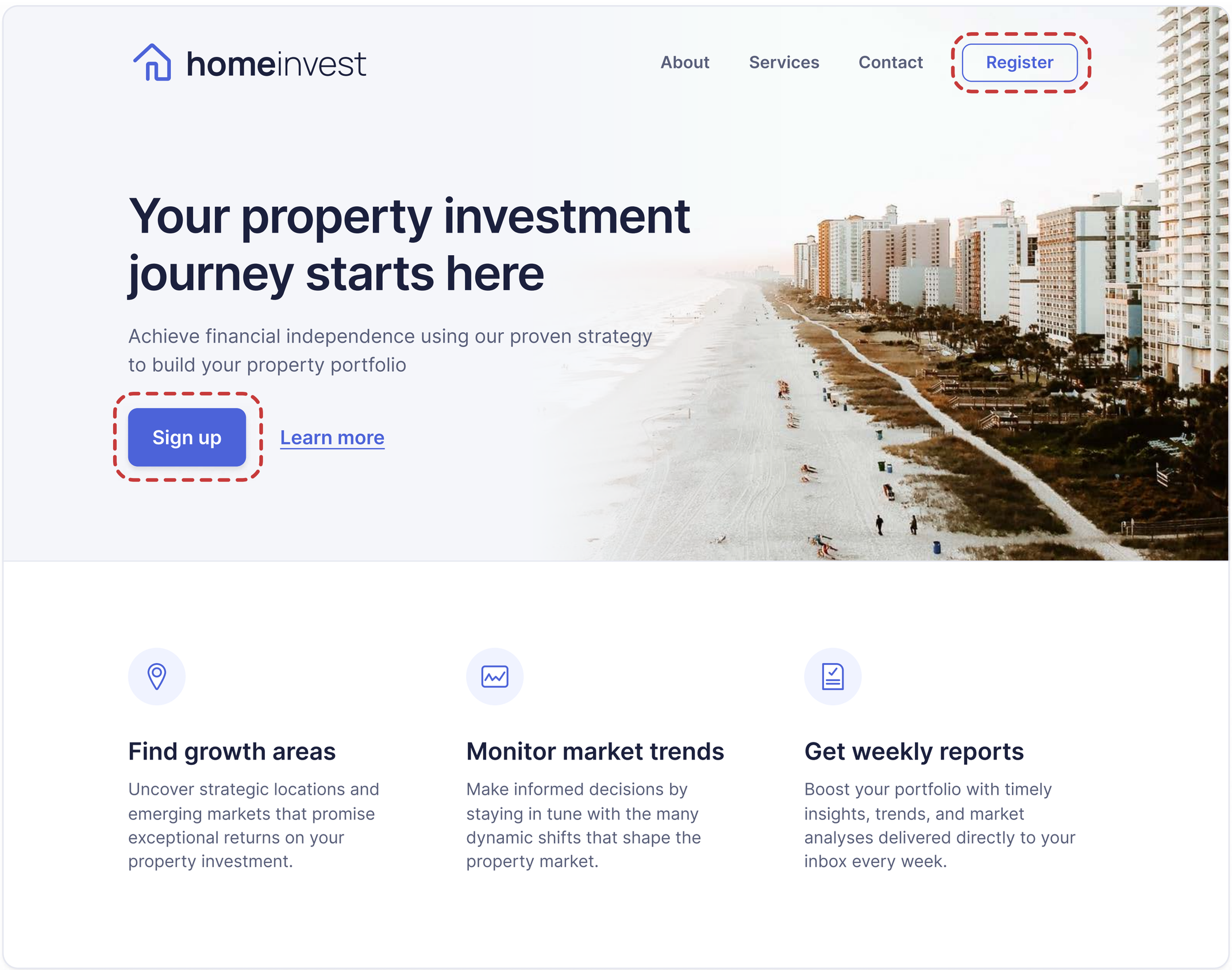


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Some common examples of inconsistent vocabulary on interfaces:

- Publish / post
- Sign up / register
- Log in / sign in
- Delete / remove
- Subscribe / join

“Register” and “Sign up” are used inconsistently in the following landing page example. This can cause confusion.



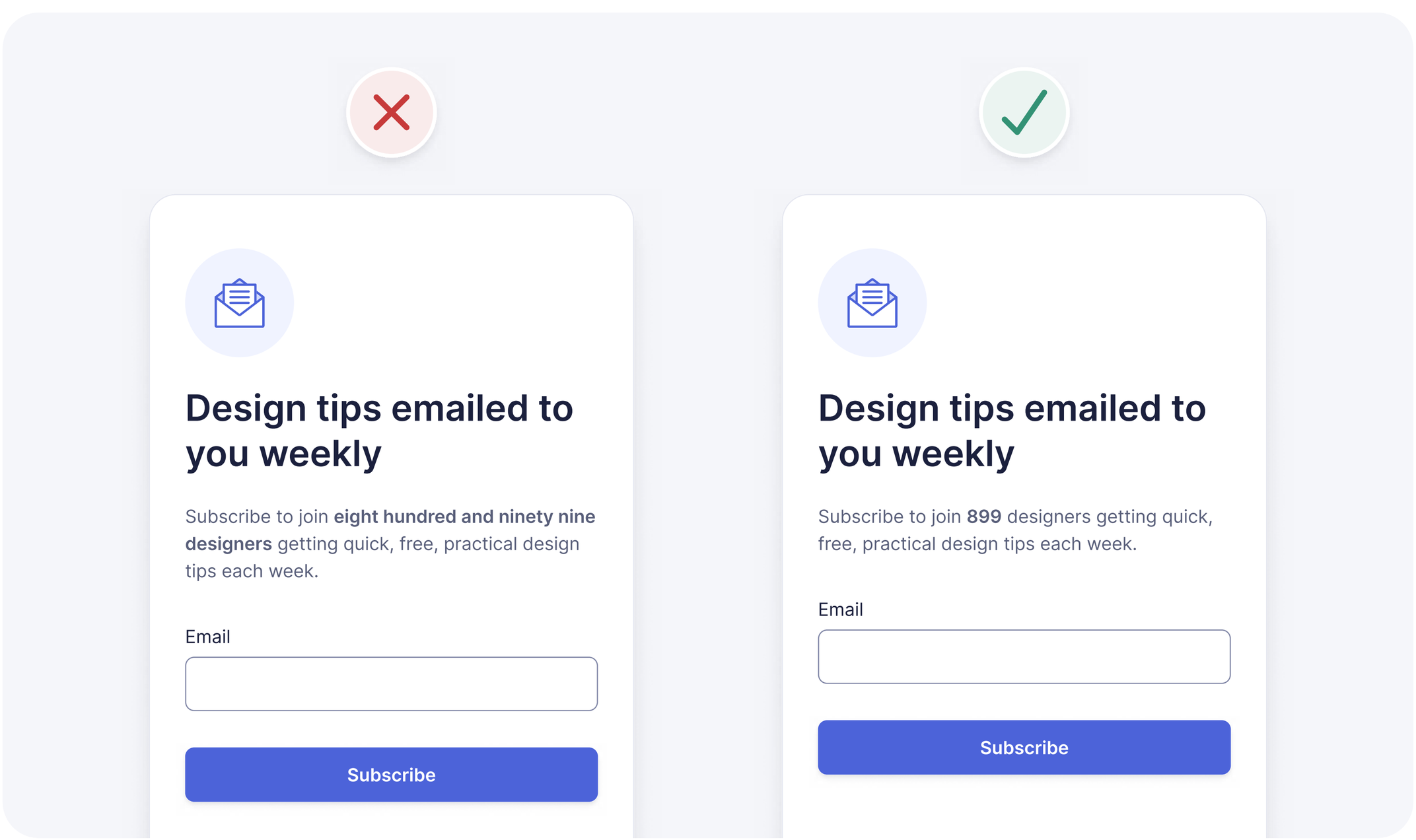
Example of inconsistent use of vocabulary

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Use numerals for numbers

Use numerals for numbers, rather than spelling them out as text. For example, use 245 rather than “two hundred and forty five”. This has the following advantages:

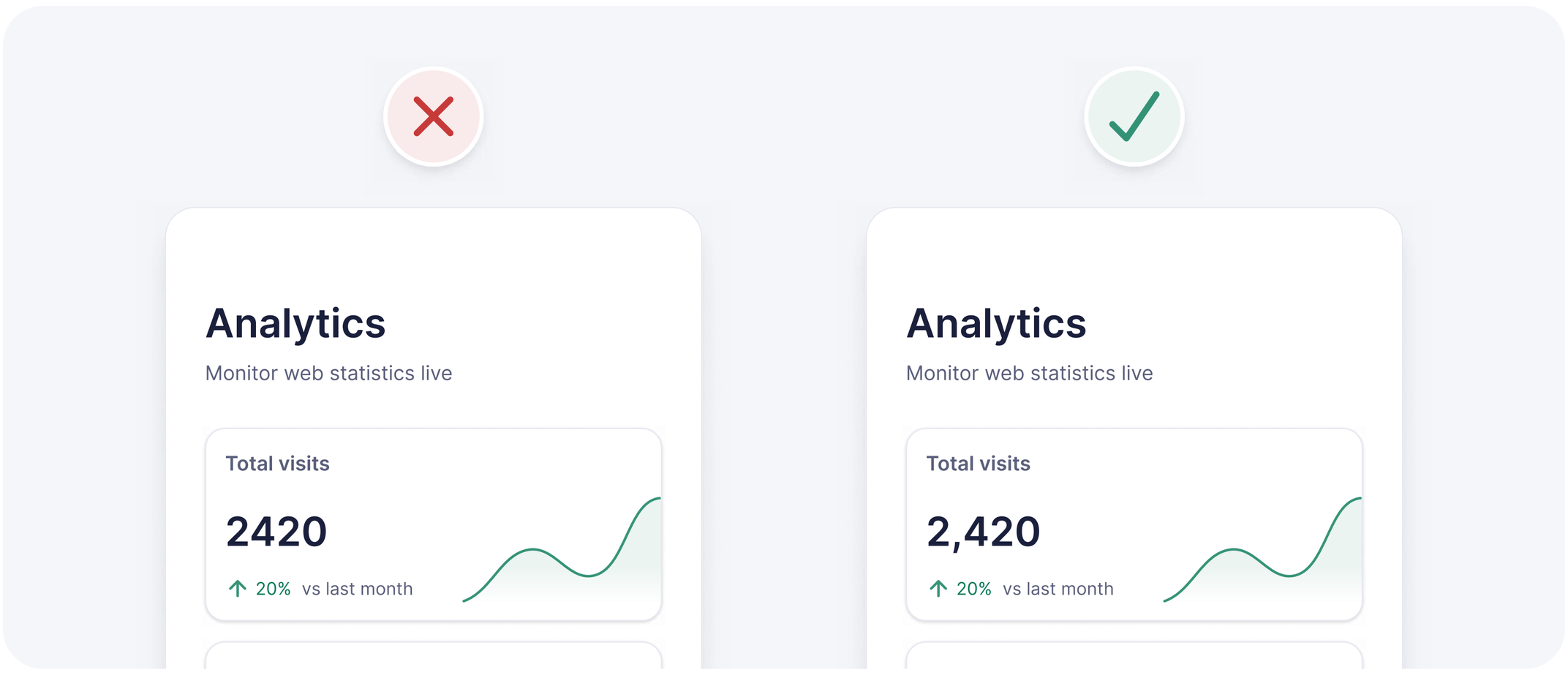
- Numerals are easier to scan as they have a different shape to letters.
- Numerals are quicker for people to read and understand.
- If people are looking for a numerical fact or figure, they’ll naturally expect it to be in numerical format.
- Writing numbers as numerals is much more concise.



Example of numbers being written as words versus numerals

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Make sure that you format numerals consistently and use commas to help break them up. For example, write 1,000, not 1000.



Example of a comma being used to break up numerals

For very large numbers, consider simplifying them by using a combination of numerals and letters. For example, write 1 billion, not 1,000,000,000. This avoids people having to count how many numbers there are, and decreases cognitive load.

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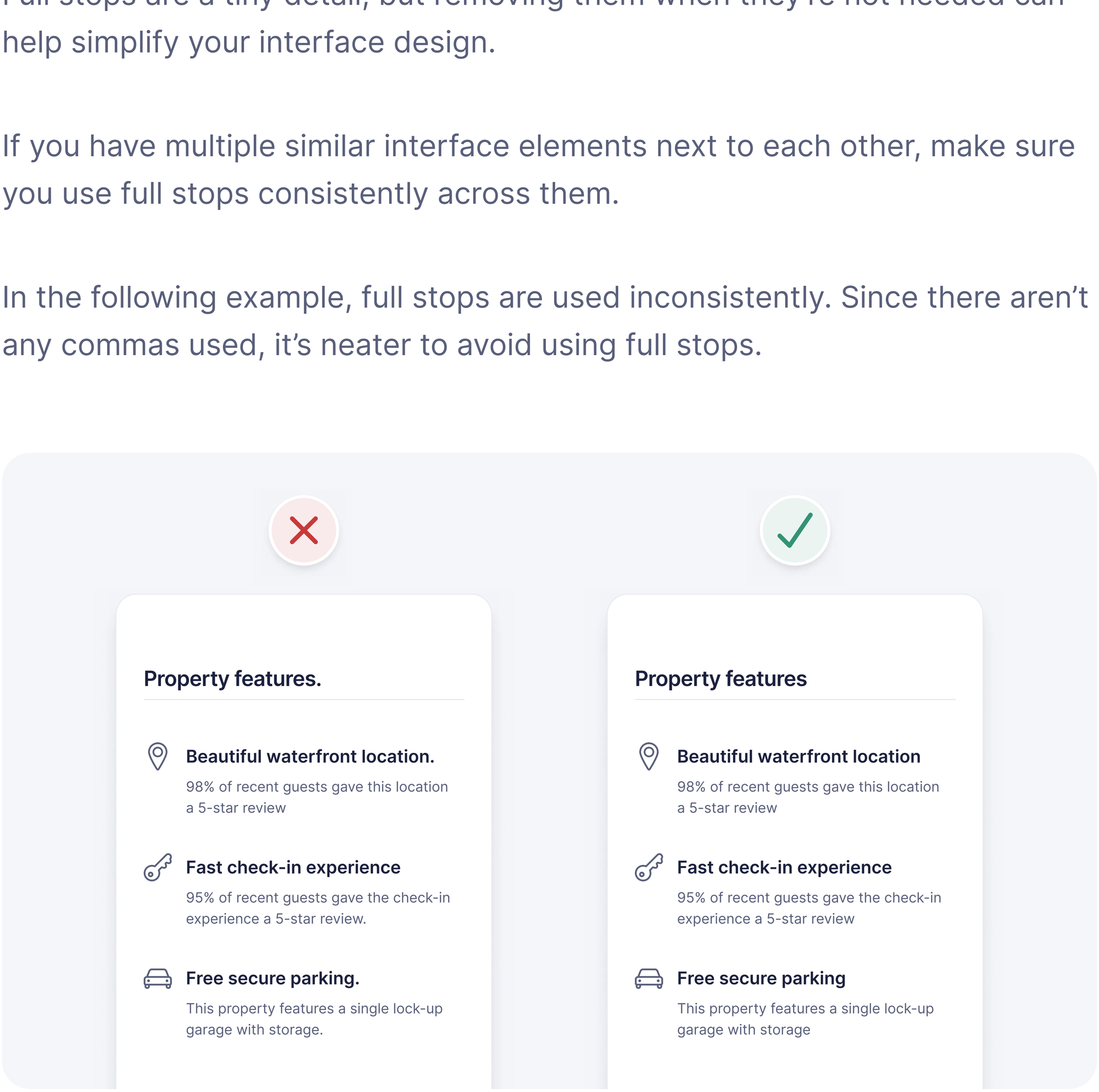
Avoid full stops if possible

Most user interface text should be short enough that commas and full stops (periods) aren’t needed. Don’t add full stops unless the piece of text forms a full sentence with commas.

Full stops are a tiny detail, but removing them when they’re not needed can help simplify your interface design.

If you have multiple similar interface elements next to each other, make sure you use full stops consistently across them.

In the following example, full stops are used inconsistently. Since there aren’t any commas used, it’s neater to avoid using full stops.

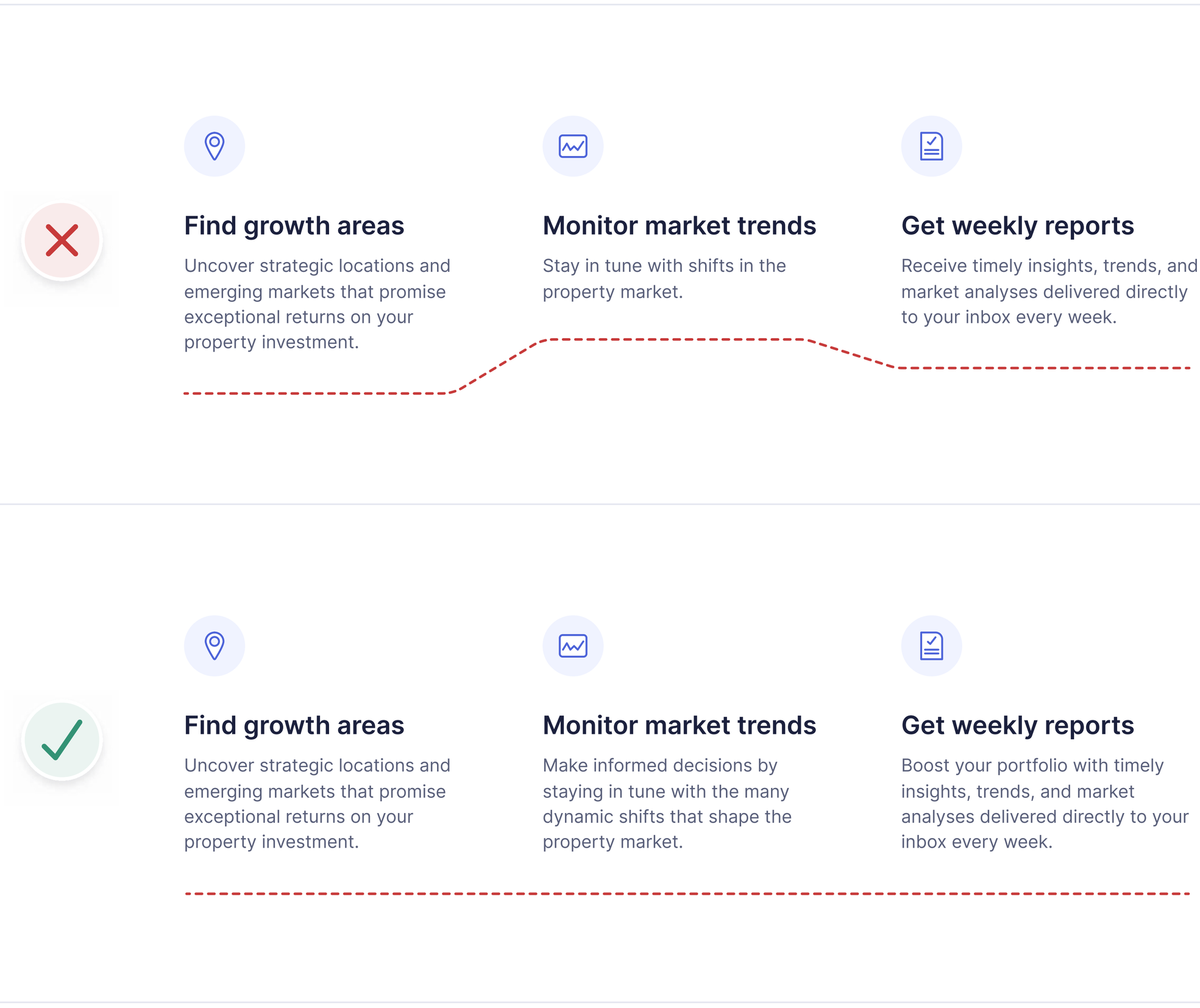


Example demonstrating inconsistent use of full stops

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Ensure text length is similar across similar interface elements

If you have multiple blocks of text aligned in a row, try to ensure that they're the same length. The more interface elements we can align with each other, the more organised and simple an interface will look. This makes it faster and easier for people to understand.



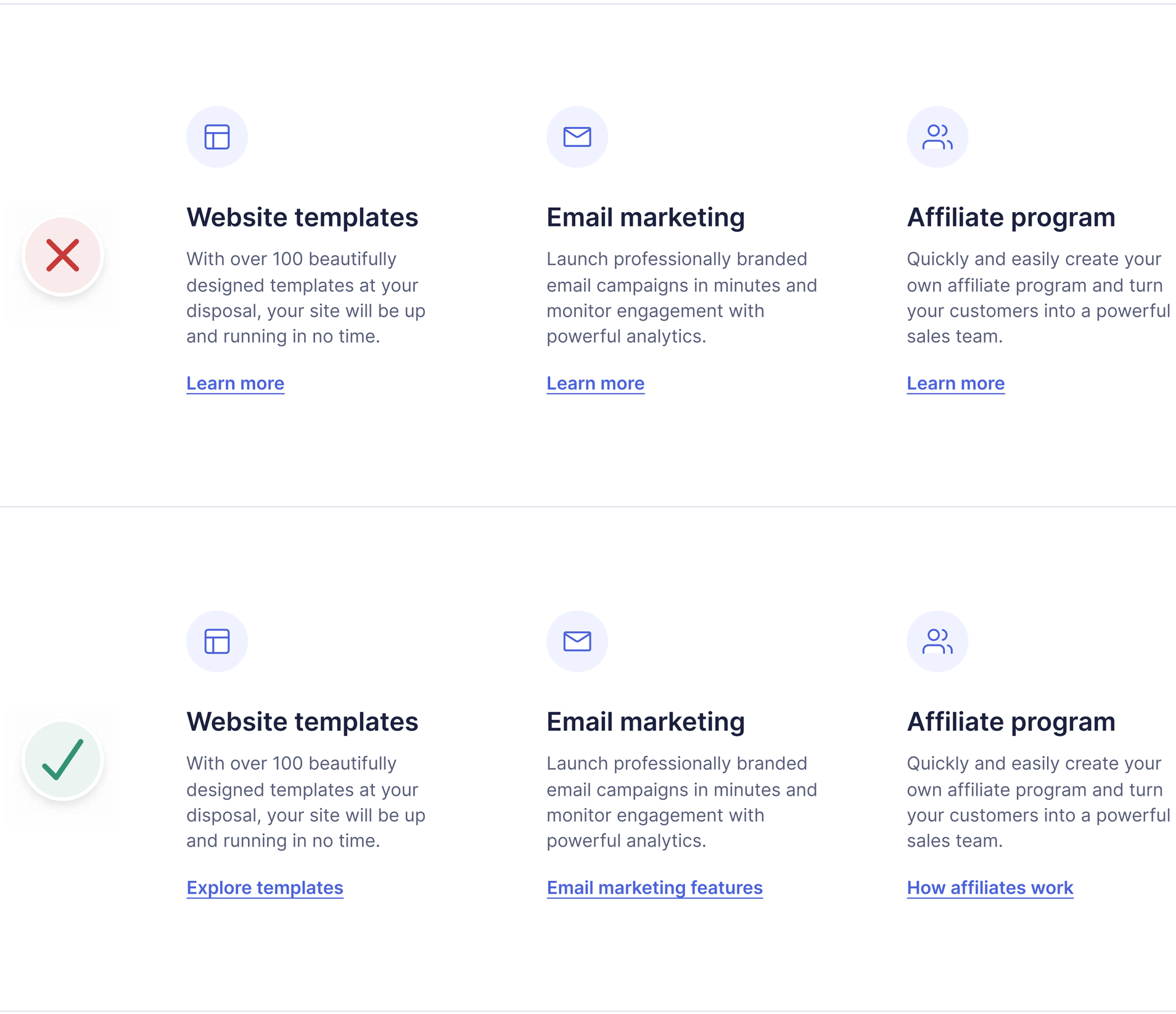
Example of different text lengths aligned in a row

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Ensure text links describe their destination

The purpose of a text link is to take you to another page or a different part of the same page. Text links need to describe where they'll take you when actioned. Using generic text like "learn more", "read more", or "click here" for text links can be problematic for the following reasons:

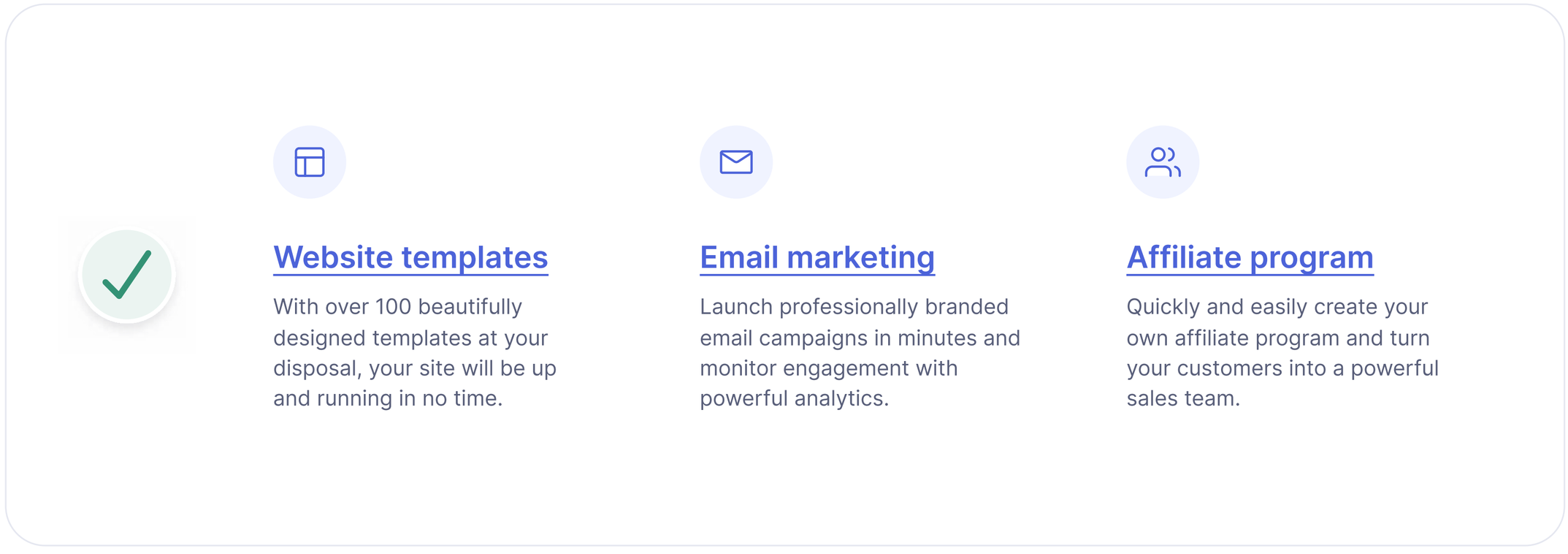
- It's more difficult to scan a page with links that aren't descriptive, as you're forced to read the surrounding text to gain context. This is even harder for non-sighted people using screen readers.
- Those using screen readers often listen to a list of all text links on a page to help them quickly skip to the information they're after. If links aren't descriptive, they won't make sense when read out of context in a list.



Example of generic text links versus descriptive text links

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Some could mistakenly think the 3 “learn more” links, in the previous example, all link to the same page. Another option is to remove the “learn more” link and simply turn the heading into a link.

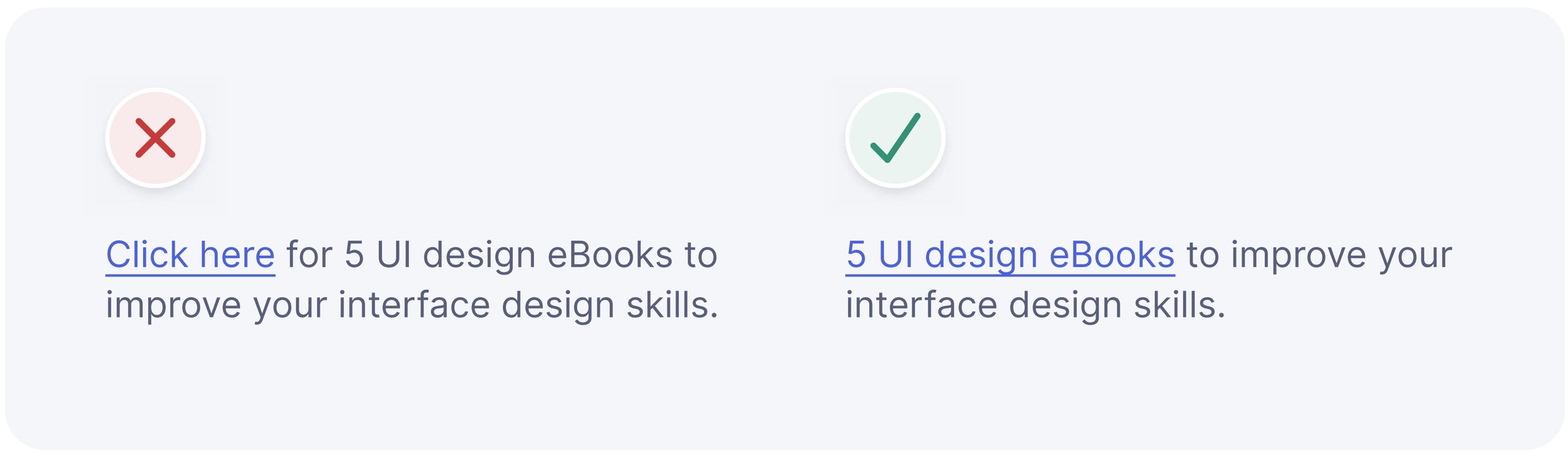


Example of headings as links

Using “click here” for text links is another common mistake:

- It’s inaccessible and difficult to scan.
- It’s unnecessary to tell people how to use a link, as most already know that links can be actioned (make sure links look different to other text).
- “Click” is also inaccurate for those not using a mouse. They might be using a mobile phone, keyboard, or voice recognition.

Avoid using “click here” for text links. Instead, use the name of the destination page.



Example of text link using “click here” versus the name of the destination page

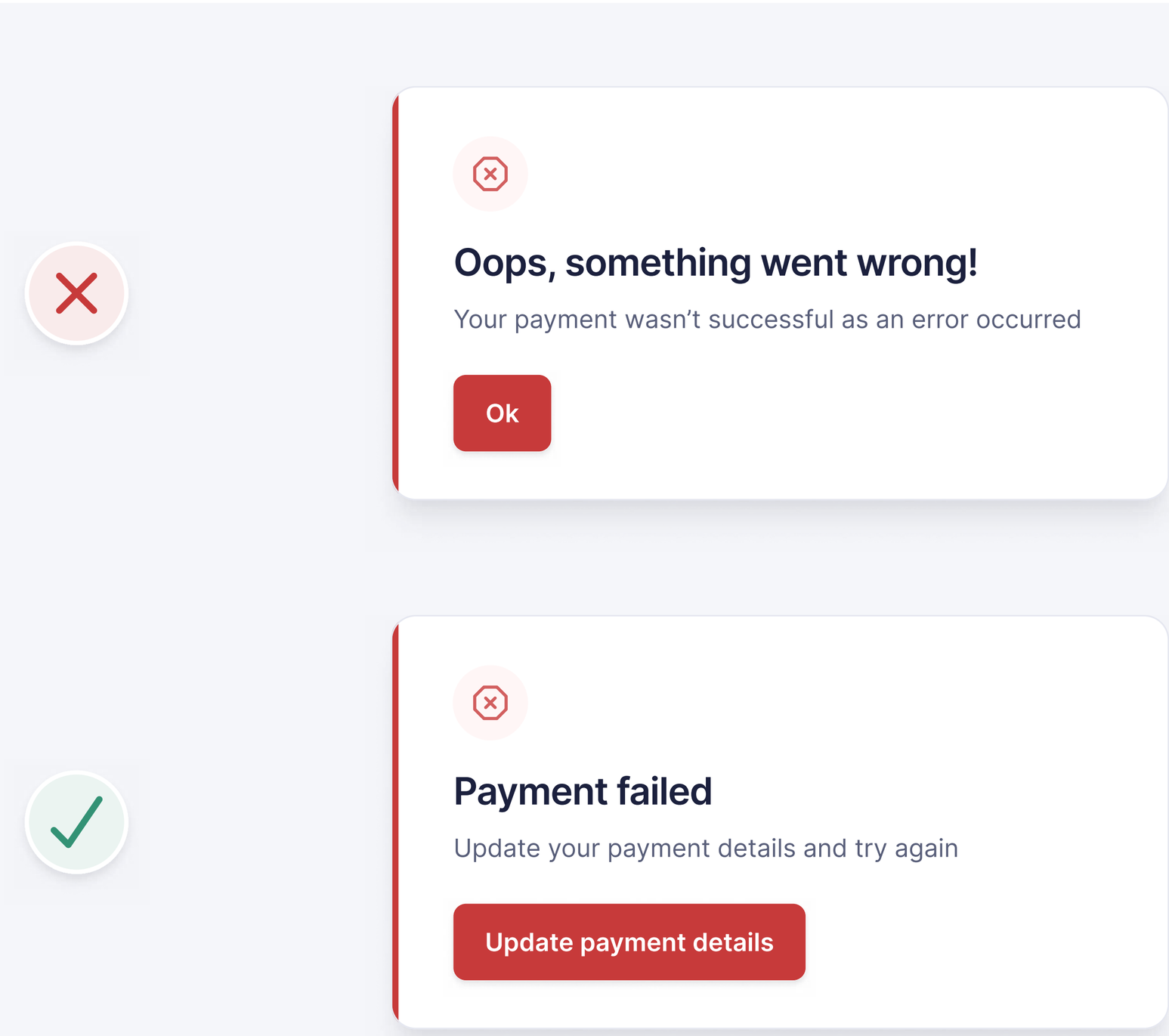
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Write clear error messages

Error messages should let people know that a problem occurred, why it happened, and provide a solution to fix it and move forward.

Quick tips to keep in mind when writing error messages:

- Never blame the user. Always be positive and helpful.
- Be concise and avoid unnecessary words like “please”, “sorry” and “oops”.
- Don’t talk like a robot, keep language clear and conversational, and avoid technical jargon.
- Make headings and buttons descriptive, so people don’t need to read supporting text.



Unclear versus clear error message

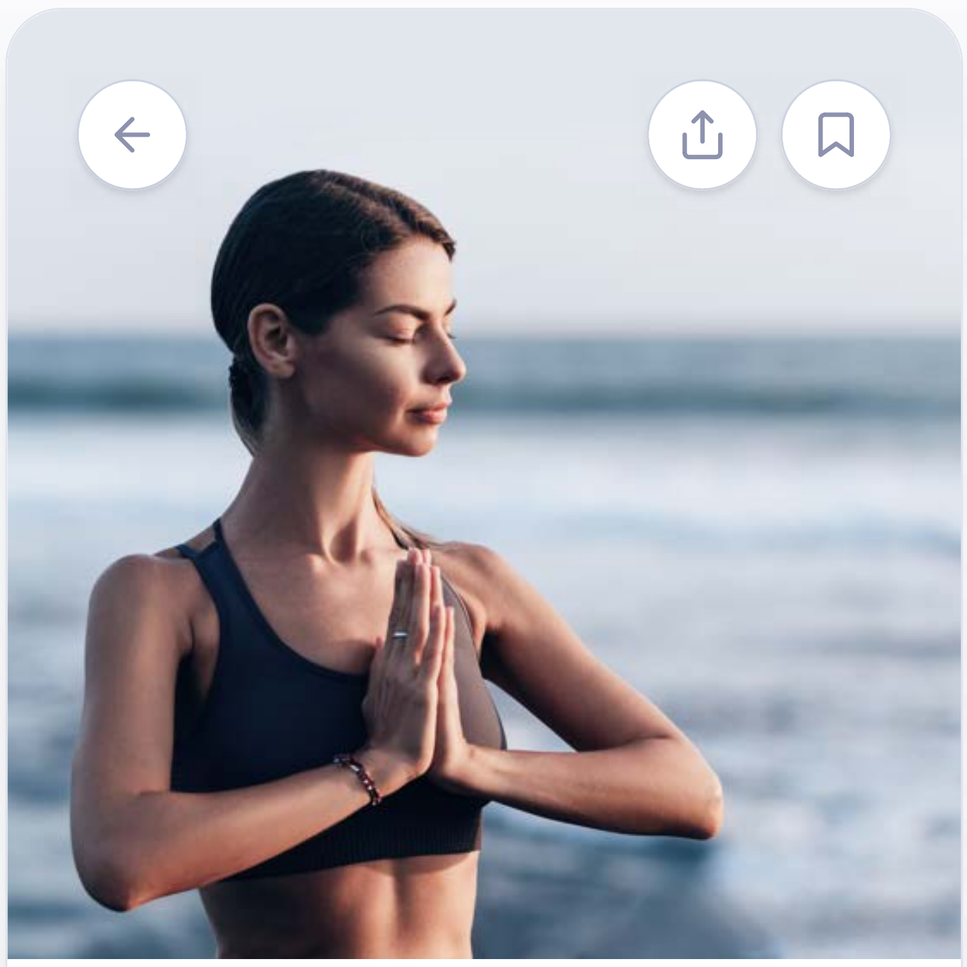
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Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off



Morning Yoga Workout

WITH BROOKLYN SIMS

5.0 (23 reviews)

20 mins | Beginner | Ambient | None

Escape the stresses of quotidian existence with this harmonious fusion of contemplative pranayama techniques and corporeal postures. You will feel rejuvenated and ready to take on the day.

Inhale Good Vibes

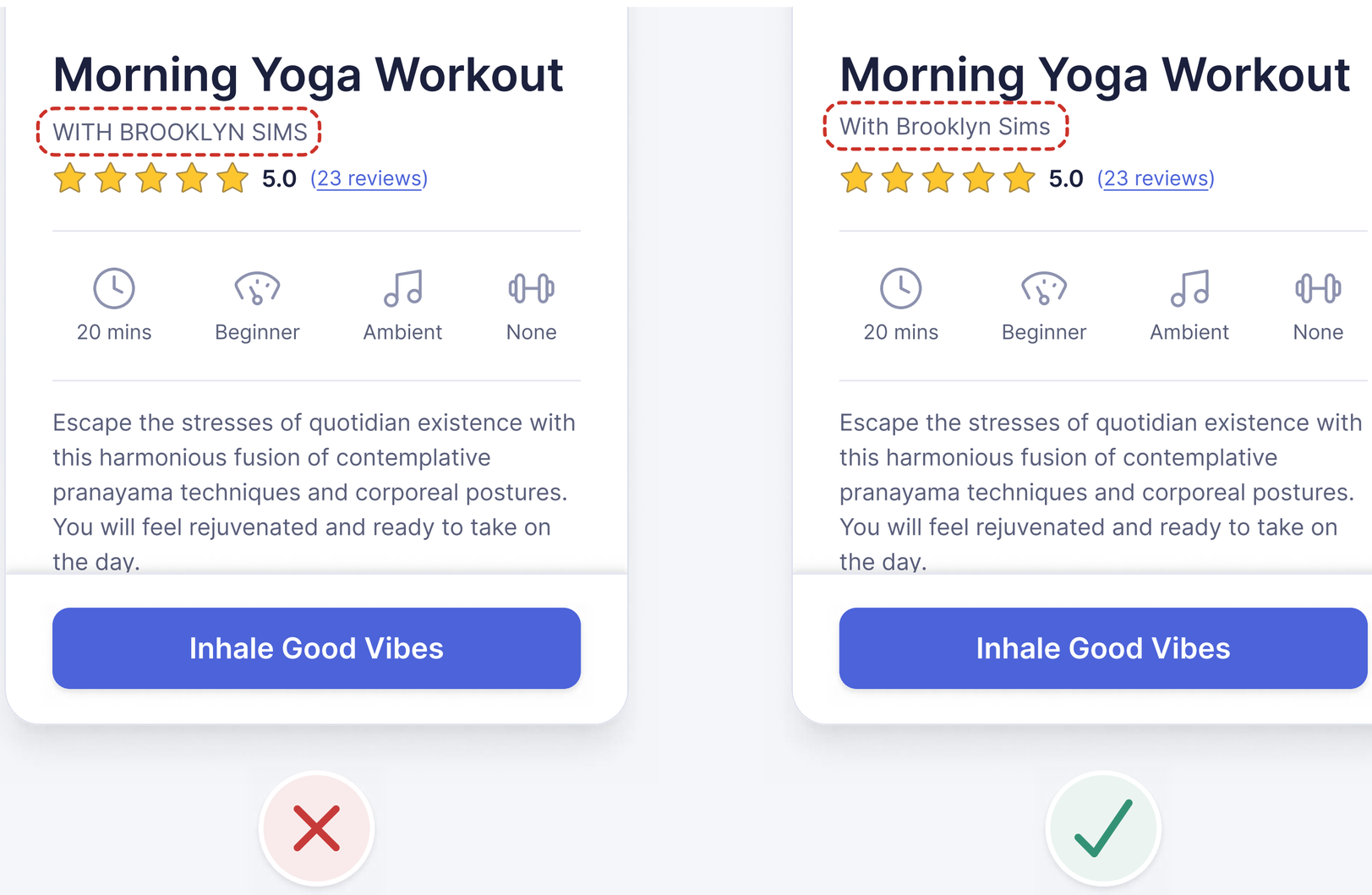
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Limit the use of uppercase

Unless you’re shouting at people, there aren’t many valid reasons to use uppercase. IT’S LOUD AND DIFFICULT TO READ. When you read, you look at the shape of a word, rather than looking at each letter. The shape helps you recognise the word more quickly. Uppercase words all have the same rectangular shape. This forces you to read each letter one by one.



In the fitness app example, the instructor's name is in uppercase. Avoiding uppercase helps to improve readability.

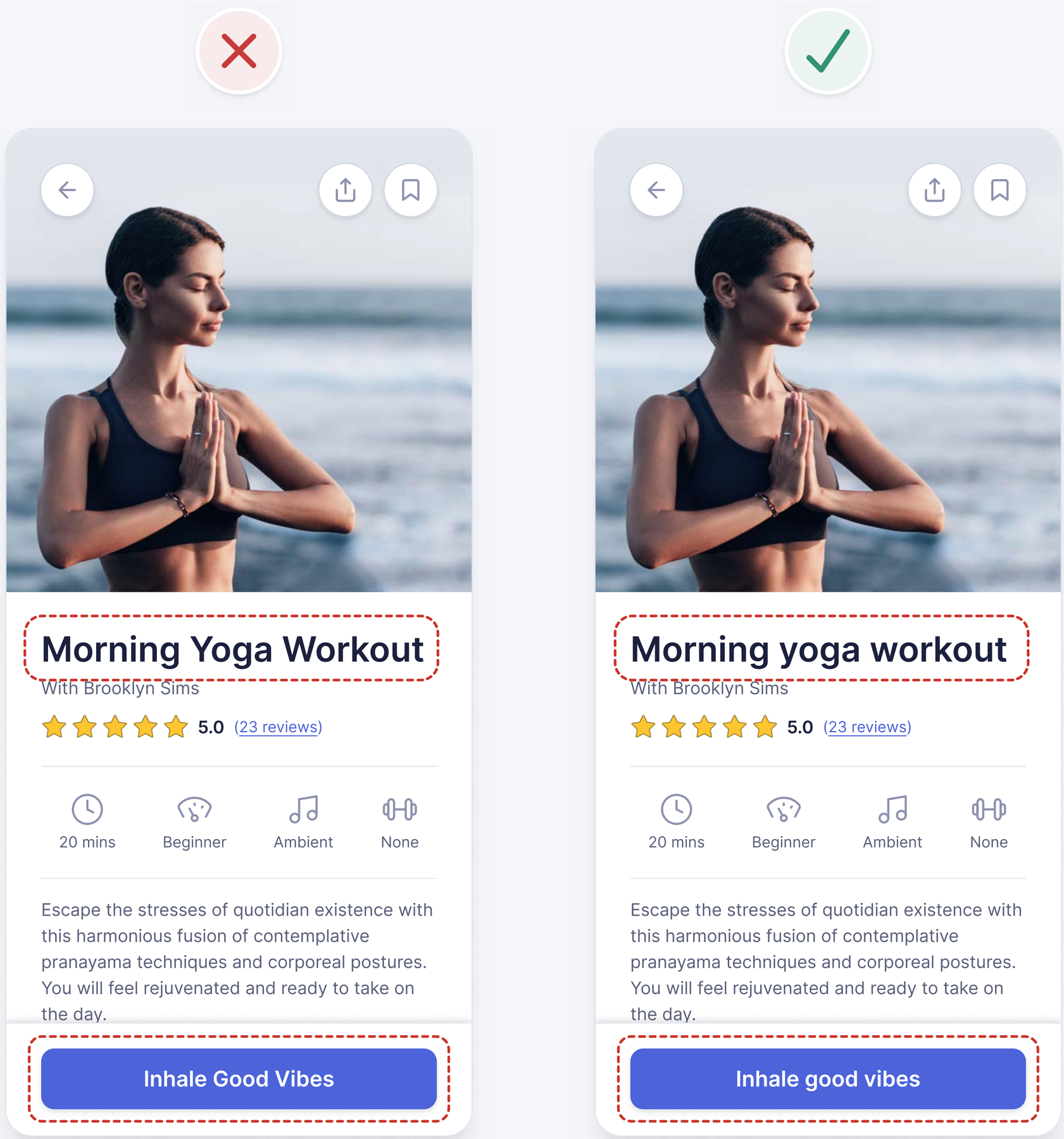


Uppercase is avoided for the instructor’s name

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Use sentence case

In the fitness app example, the title of the workout and the button text are changed from title case to sentence case to improve readability.



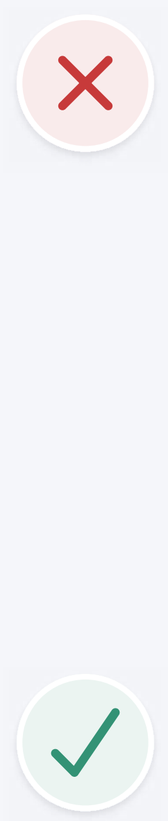
Text is changed from title case to sentence case to improve readability

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Use plain and simple language

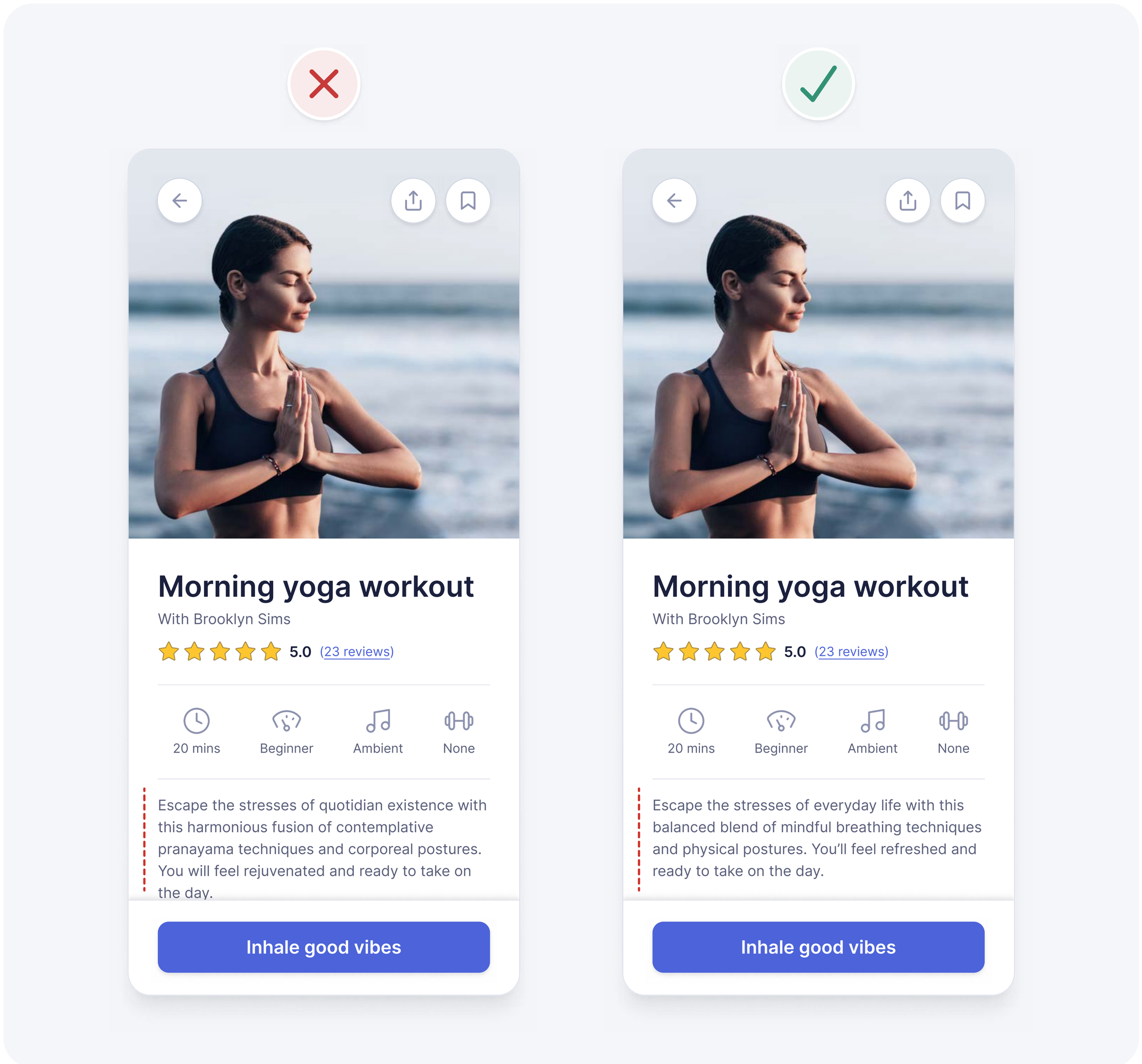
Many people have trouble reading and some may have mental disabilities. Keep your language simple and conversational to make it easier for a broader range of people to understand.

The body text in the fitness app example is complex and difficult to read. The complex words and jargon have been underlined and simplified.



Text is simplified to make it easier for more people to understand

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Complex language versus simple language

Looking good. You're nearly there. You've looked at colour, layout, typography, and copywriting. There's only one more improvement to make to the button in the next chapter.

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Chapter summary

- Be concise. Avoid unneeded words, use short words instead of long ones, and try to keep sentences under 20 words.
- Use sentence case where only the first word and proper nouns (names of people, places or things) are capitalised. Limit the use of uppercase, as it’s loud and can be difficult to read.
- Avoid jargon, slang, abbreviations, and acronyms. Keep your language simple and conversational to make it easier for a broader range of people to understand.
- Front-load text by putting the most important information at the start of your text. This makes it faster and easier for people to scan.
- Break up large pieces of information into multiple smaller ones. Highlight key information using descriptive headings. This helps people get a better idea of the structure and organisation of content.

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Your progress

6 of 8 chapters completed

1. Fundamentals
2. Less is more
3. Colour
4. Layout and spacing
5. Typography
6. **Copywriting**
7. Buttons
8. Forms

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CHAPTER 7

Buttons

Learn how to design descriptive and accessible buttons with a clear visual hierarchy

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Define 3 button weights

In most cases, you'll need 3 button weights to indicate the importance of actions: primary, secondary, and tertiary. You may also require smaller and/or larger button sizes depending on the complexity of the interface.

The following button styles are familiar, accessible, and have a clear visual hierarchy that isn't dependent on colour alone. They're not the only way to style buttons, but they're a safe option.



- **Primary button** - a rectangle with rounded corners, a solid fill of the brand colour, and white text. This is the most prominent button used to highlight the most important action.
- **Secondary button** - an unfilled rectangle with a border and rounded corners. Use the brand colour for the text and border for consistency with other interactive elements. Avoid using a solid fill of another colour, as it could conflict with the primary button. It's also safest to avoid using a light grey fill or outline, as it could be mistaken for a disabled button (a button that's unavailable and can't be pressed).
- **Tertiary button** - a transparent button with underlined text that looks like a text link. Use the brand colour for consistency with other interactive elements. Underline the text to ensure people who are colour blind can tell that it's interactive.

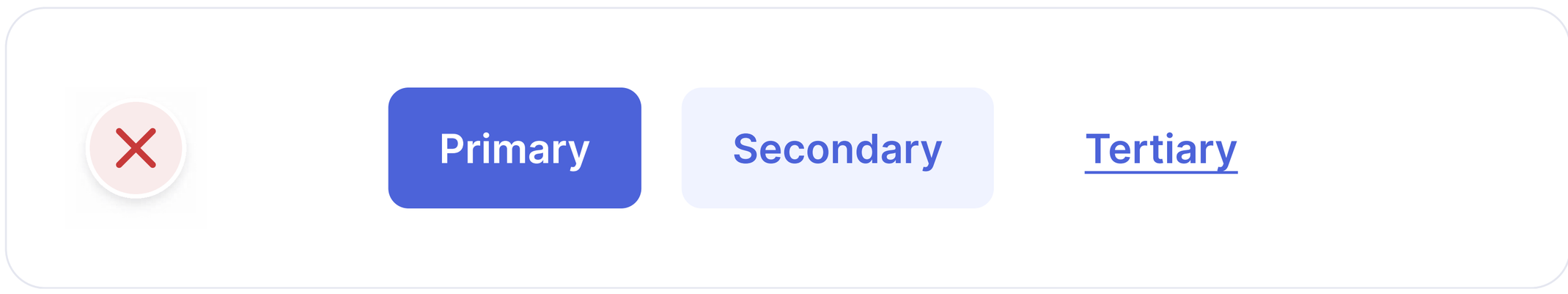
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Common button design mistakes

Let’s look at the issues with some popular button designs. These issues pose a potential risk to usability, so it’s safest to avoid them if possible. We’ll aim to at least meet WCAG 2.1 level AA accessibility guidelines, as this is the most common standard and a good place to start.

The following 9 button examples are problematic and should be avoided.

Example 1



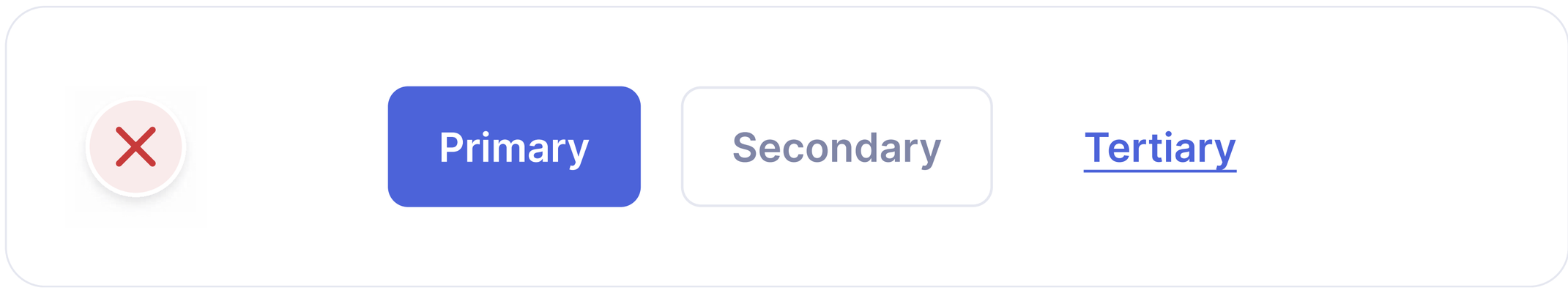
User interface components like form fields, buttons, and tabs, need to have a colour contrast ratio of at least 3:1. This helps people with low vision tell the difference between different components. Decorative styles that aren’t required to distinguish interface components can have lower contrast.

In this example, the secondary button fill contrast ratio against the background is less than 3:1. This is too low to clearly indicate the button shape to those with low vision.

Some designers may argue that the secondary button fill is decorative and doesn’t need to have a contrast ratio of 3:1 to be accessible. The fill is needed to identify the secondary button as a button. Without the fill, it’s just plain blue text with no indicator of interactivity but colour. You could add a high contrast border to the secondary button to fix this issue.

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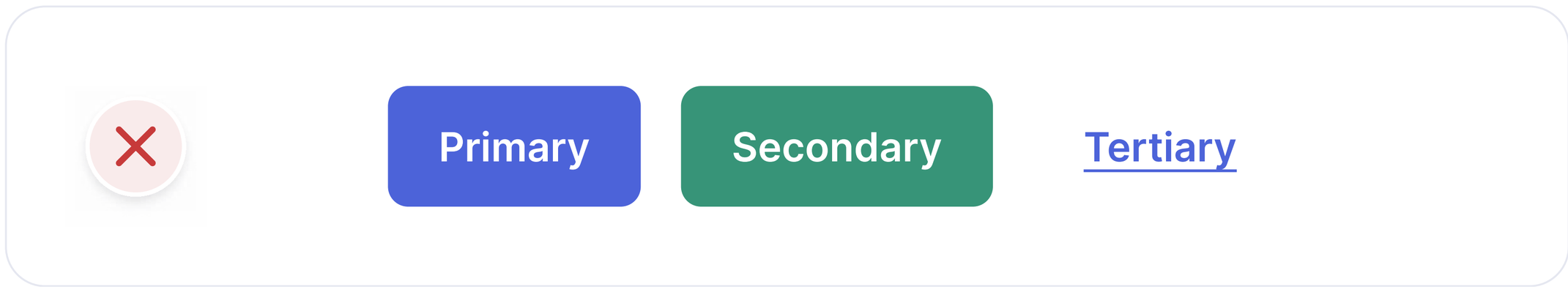
Example 2



The button styles in example 2 have the following issues:

- The secondary button could be mistaken as being unavailable or in a disabled state due to its light grey colour. It’s safest to avoid light grey buttons to reduce potential confusion.
- The secondary button text contrast ratio is less than the required 4.5:1 WCAG guideline, making it difficult to read for some.
- The secondary button border is also less than the required 3:1 ratio.

Example 3



The button styles in example 3 have the following issues:

- The primary and secondary buttons conflict due to their similarity. This confuses the visual hierarchy, making it unclear which is more important.
- Since both buttons have the same style, the only way to tell the difference between them is via their colour. This means people who are colour blind may not be able to differentiate between them.
- The contrast ratio between the buttons is also less than the required 3:1. This means that people with low vision may not be able to clearly distinguish between them.

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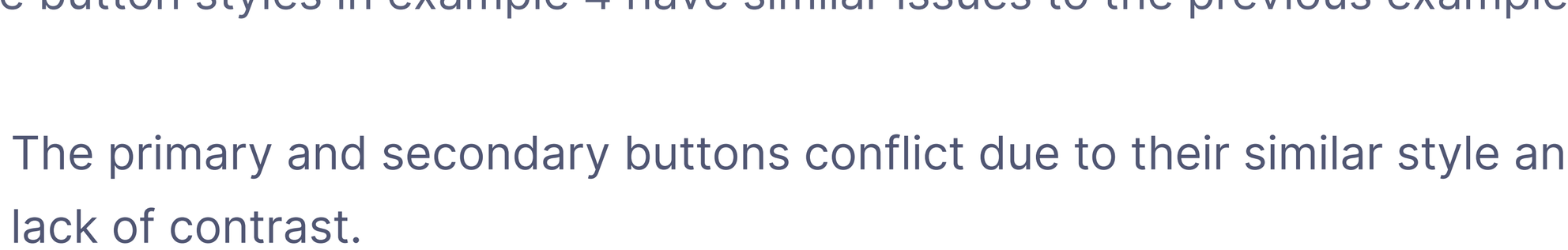
Example 4



The button styles in example 4 have similar issues to the previous example:

- The primary and secondary buttons conflict due to their similar style and lack of contrast.
- The secondary button text contrast ratio is too low and should be at least 4.5:1 to ensure it’s accessible.

Example 5

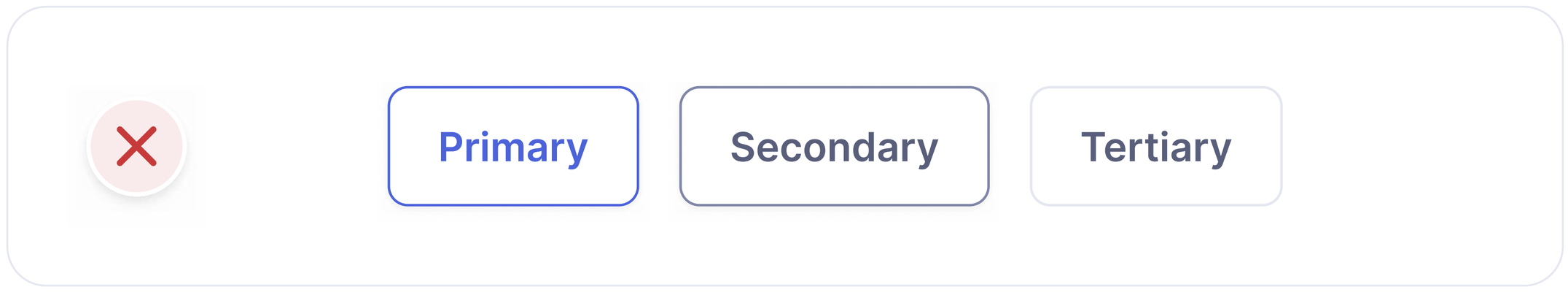


The button styles in example 5 are too similar for people with low vision to distinguish between. The contrast ratio between buttons is the only way to tell the difference between them and it’s less than the required 3:1 ratio.

Buttons should have a clear visual hierarchy that isn’t reliant on colour.

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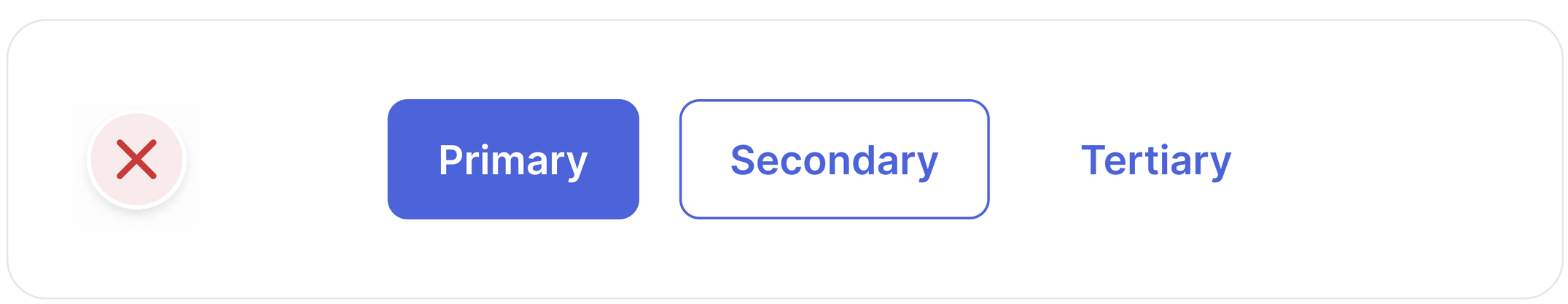
Example 6



The button styles in example 6 have similar issues to the previous example:

- Button styles are too similar in contrast and style for those with low vision to differentiate.
- The contrast ratio of the tertiary button border must be at least 3:1 to be accessible and clearly identify it as an interactive element.

Example 7



When it comes to accessibility, it’s important that we don’t rely on colour alone to distinguish interface elements. Those who are colour blind won’t be able to tell the difference between elements.

In example 7, the tertiary button isn’t accessible because colour is the only indicator that it’s interactive. This means that those who are colour blind may not be able to distinguish it from plain text.

The context, position and close proximity of the tertiary button to other buttons may help distinguish it from plain text in some cases, but there’s still a risk that it could cause confusion.

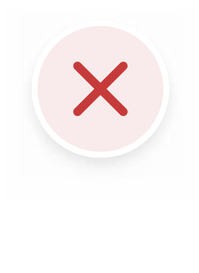
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Example 8



Every detail of an interface design should have a logical purpose. Why are the primary and secondary button shapes different in example 8? Do they function differently? Elements that function the same should look the same. Avoid inconsistent button shapes as they can cause confusion.

Example 9



Visual hierarchy is how we communicate the relative importance of interface elements. The purpose of the 3 button styles is to indicate the importance of actions. This helps people make decisions. The button styles in example 9 have the following issues:

- The visual hierarchy is unclear, as the primary and secondary buttons have similar visual weight or prominence.
- The secondary button background contrast ratio is below 3:1, which is too low to clearly indicate the button shape to people with low vision.

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Button design guidelines

Based on the previous button design mistakes, here are some quick and practical tips to keep in mind to design user-friendly and accessible buttons:

- Buttons should have a clear visual hierarchy that doesn't depend on colour alone.
- The contrast ratio of the button shape must be at least 3:1 to ensure people with low vision can identify it as an interactive element.
- The button text contrast ratio must be at least 4.5:1 to meet WCAG 2.1 level AA accessibility requirements.
- If buttons have identical styles, the contrast ratio between them must be at least 3:1 to ensure they're distinguishable to those with low vision.
- Use a large target area (at least 48pt by 48pt) to ensure people can easily press buttons.
- Make sure there's sufficient space between buttons so people don't mistakenly press the wrong one. I usually use 16pt to be safe.

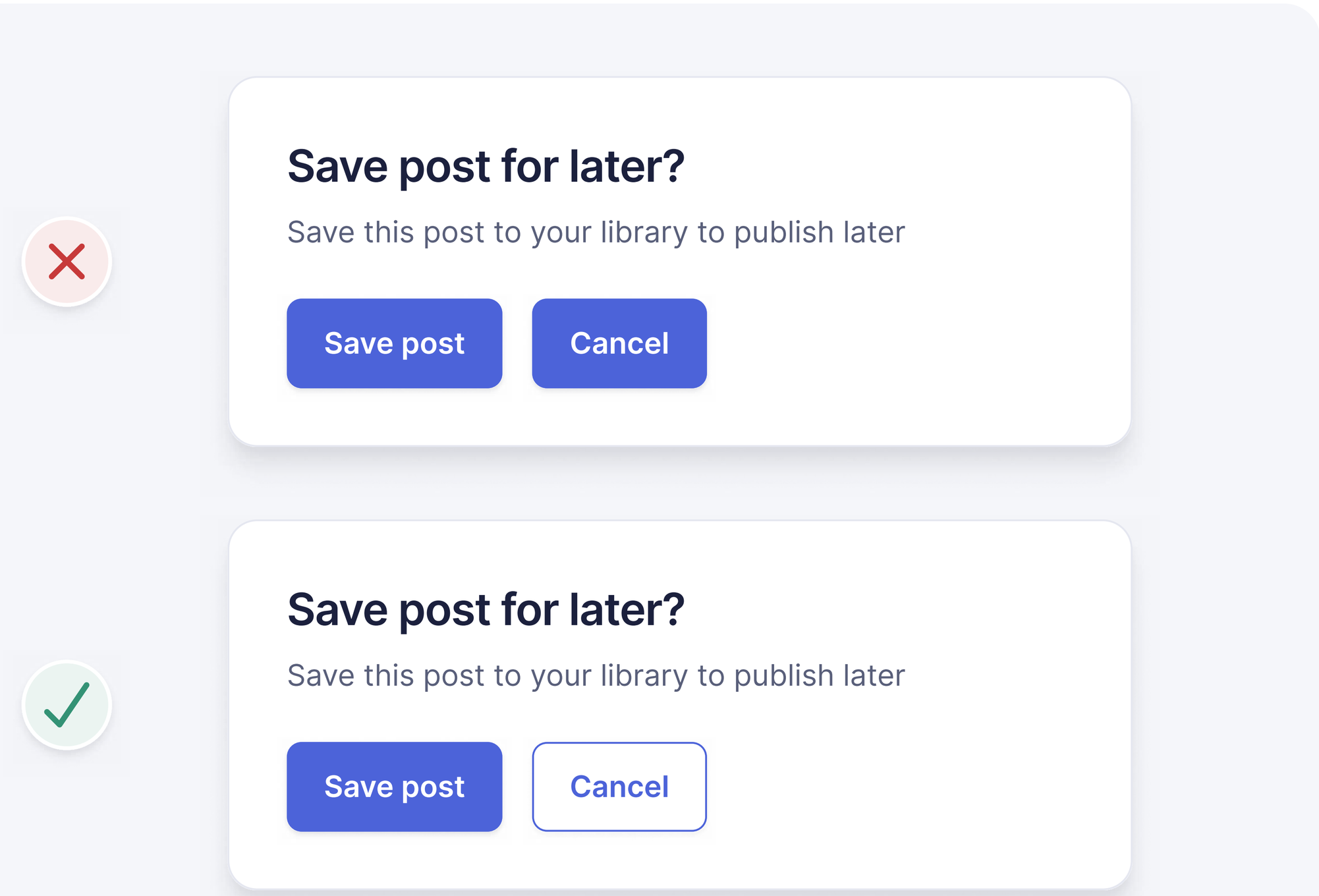
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Use a single primary button for the most important action

The purpose of a primary button is to highlight the most important action on an interface. This helps people understand what to do next in order to complete their task.

Guidelines for using primary buttons:

- If there isn’t a single most important action on an interface, use secondary or tertiary buttons for those actions.
- Avoid using multiple primary buttons on a screen. They can compete for attention and cause confusion around what to do next.

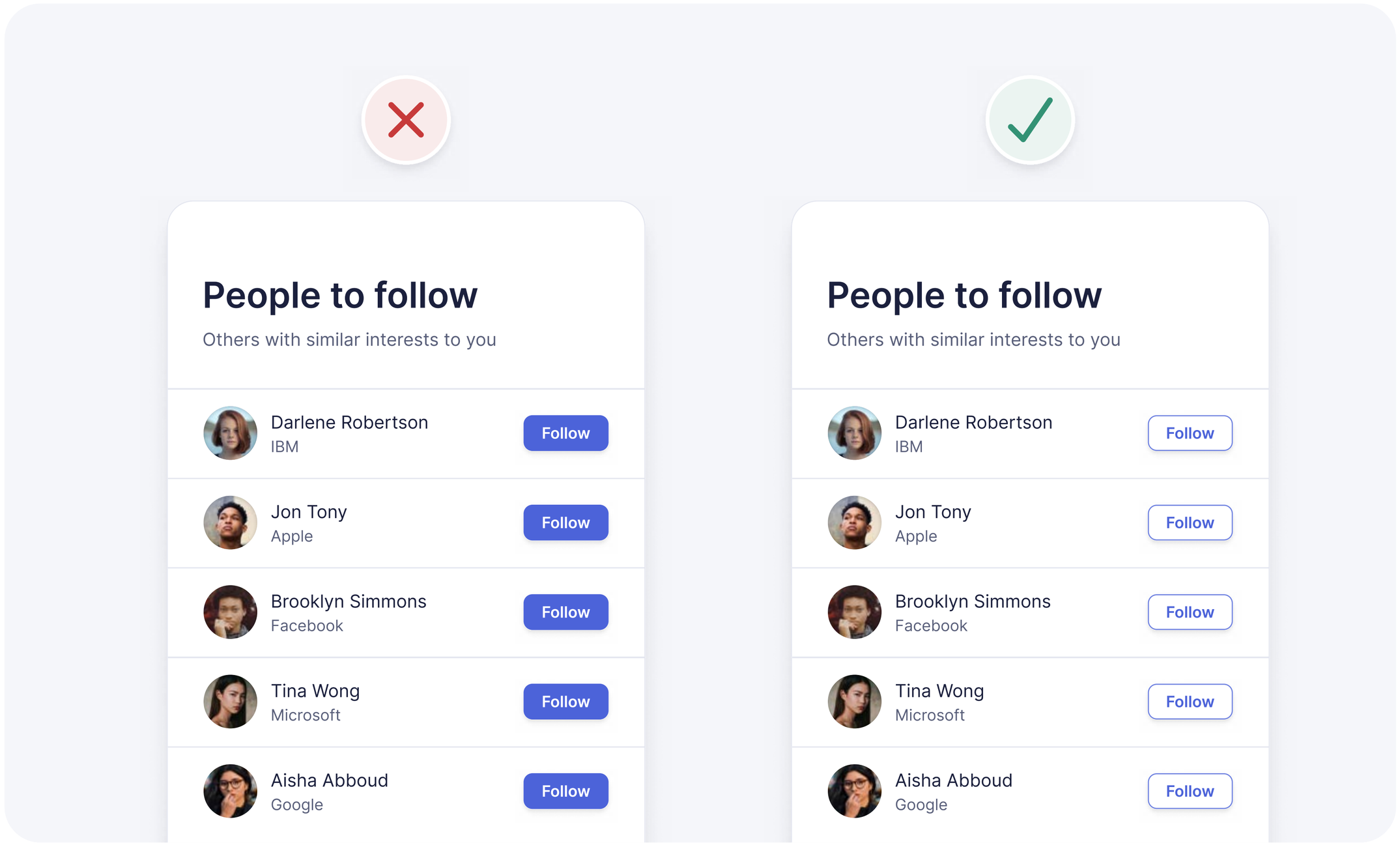


Multiple primary buttons can cause confusion around what to do next

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In the following example, multiple primary buttons are competing for attention. This is telling people that all of these actions are the most important action on the screen. Multiple primary buttons can clutter an interface and confuse the visual hierarchy. If everything is considered important, then nothing stands out as the most important.

Using less prominent secondary buttons instead helps to correct the visual hierarchy. You could also use tertiary buttons to further decrease the prominence of the buttons.



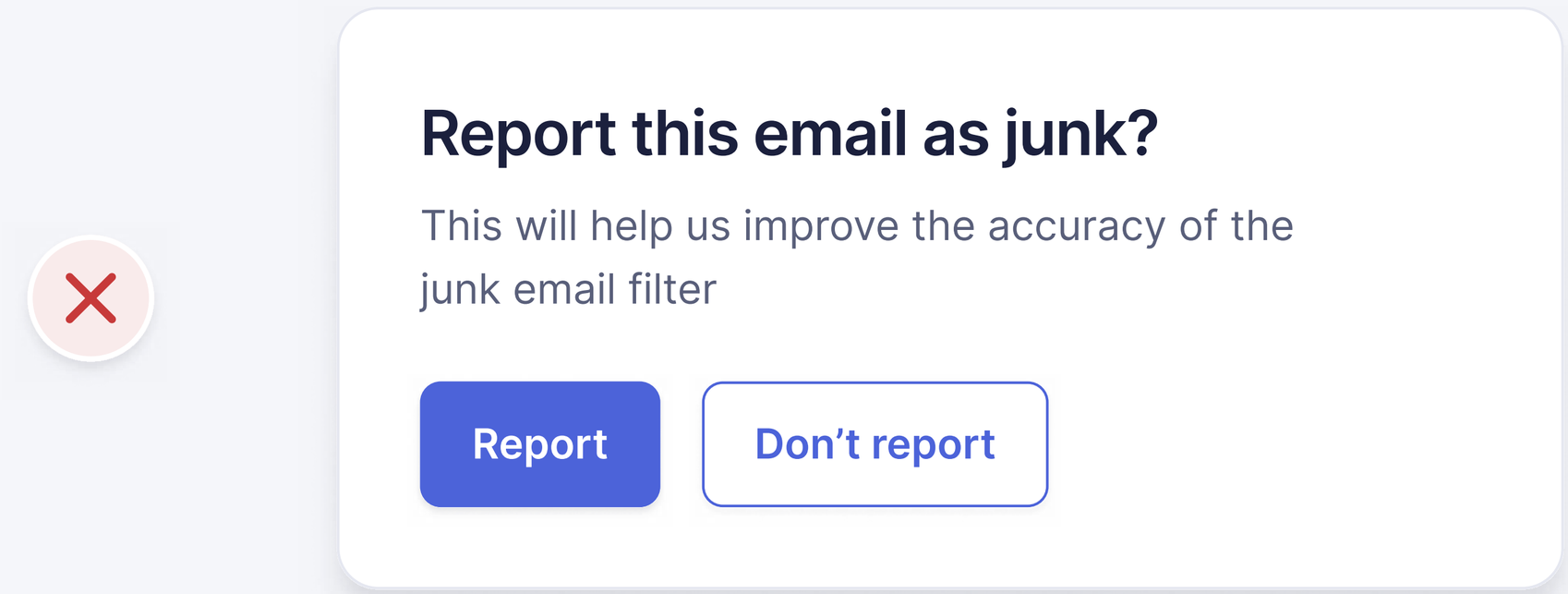
Multiple primary buttons can clutter an interface and confuse the visual hierarchy

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Use secondary buttons for less important actions

Secondary buttons are usually the alternative to the primary action. Use secondary buttons for less important actions or for multiple actions that have equal importance.

The following example is a message that appears after someone deletes a suspicious email from their inbox. It’s up to them whether they want to report the email as junk or not. Since the buttons have equal importance, they should have equal prominence. Don’t make one button more prominent than the other as it creates bias.



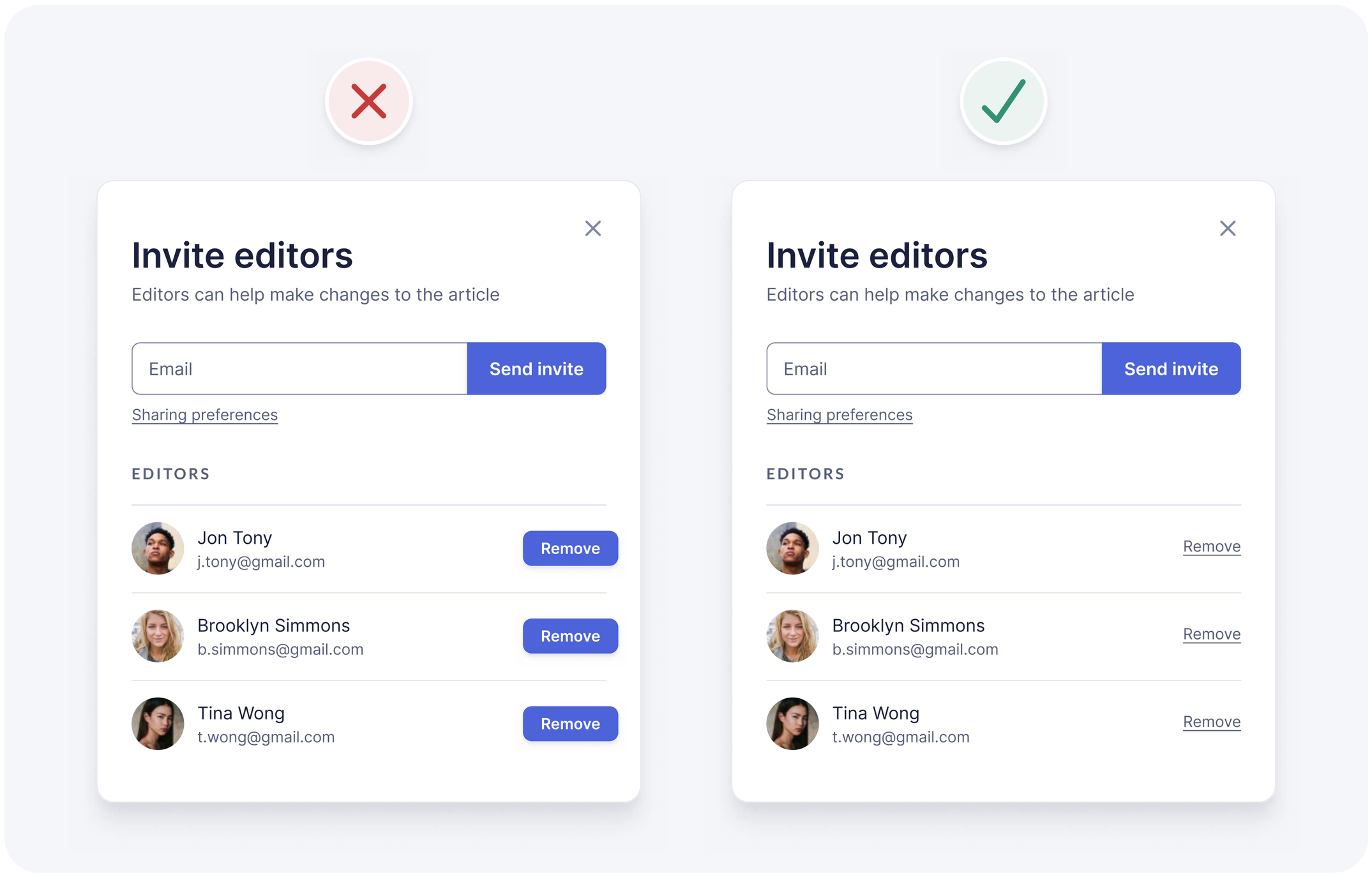
Use secondary buttons for multiple actions that have equal importance

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Use tertiary buttons for the least important actions

Due to their low prominence, tertiary buttons are especially good for displaying multiple actions or destructive actions that you want to make less prominent.

In the following example, too much attention is brought to destructive actions. This causes them to compete with the primary “send invite” action. Using tertiary buttons instead reduces their prominence. This corrects the visual hierarchy, clearly making “send invite” the most prominent action.



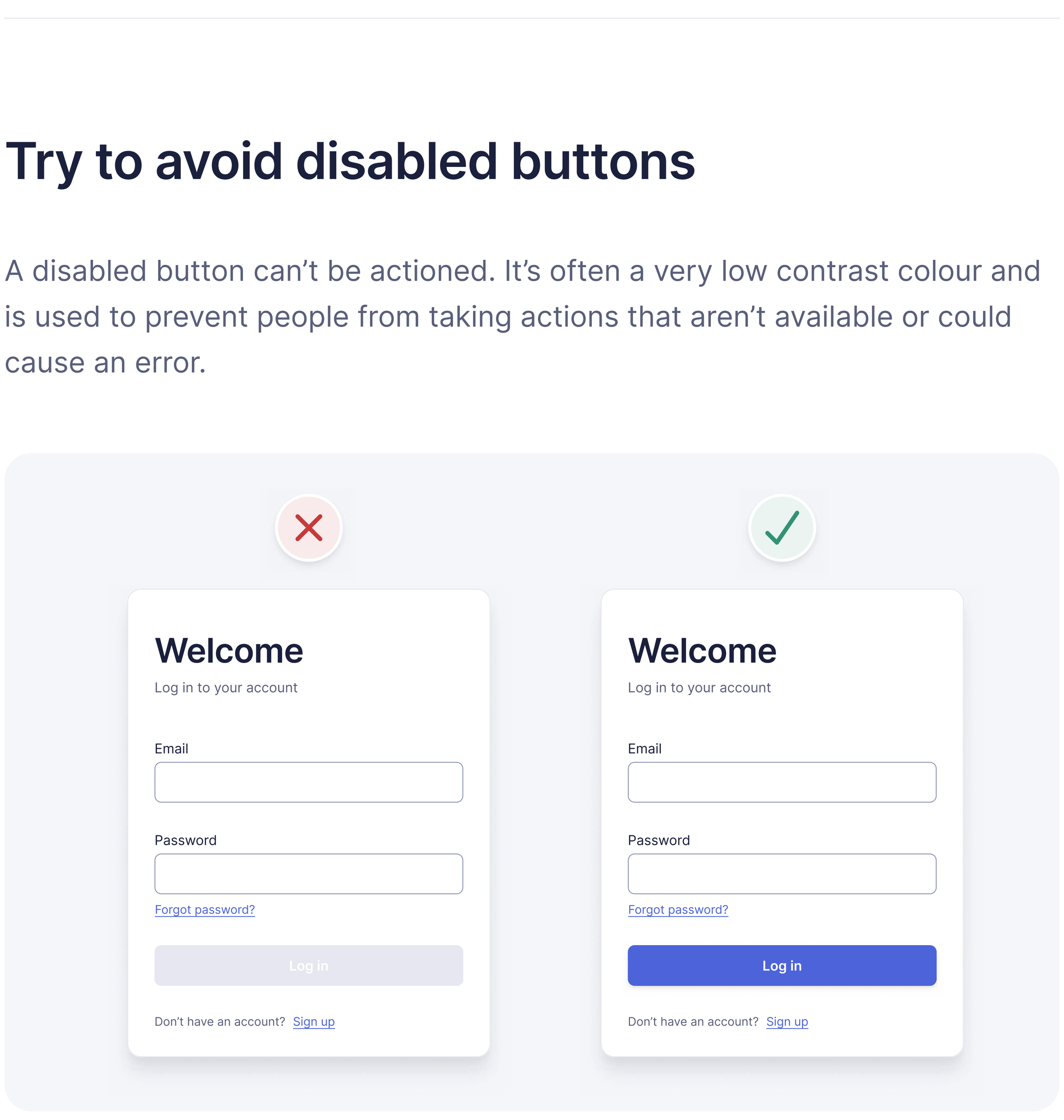
Tertiary buttons being used to display multiple destructive actions

Decreasing the prominence of destructive actions is also a good way to help people avoid actioning them mistakenly. You’ll learn more about this soon.

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Try to avoid disabled buttons

A disabled button can’t be actioned. It’s often a very low contrast colour and is used to prevent people from taking actions that aren’t available or could cause an error.



Disabled login button versus enabled login button

Disabled buttons can be problematic for the following reasons:

- They can cause people to get stuck, as they generally don’t provide feedback on why they’re not actionable.
- Their low contrast makes them hard for those with poor eyesight to see.
- They’re not keyboard accessible, which may confuse keyboard users when they can’t focus on the button.

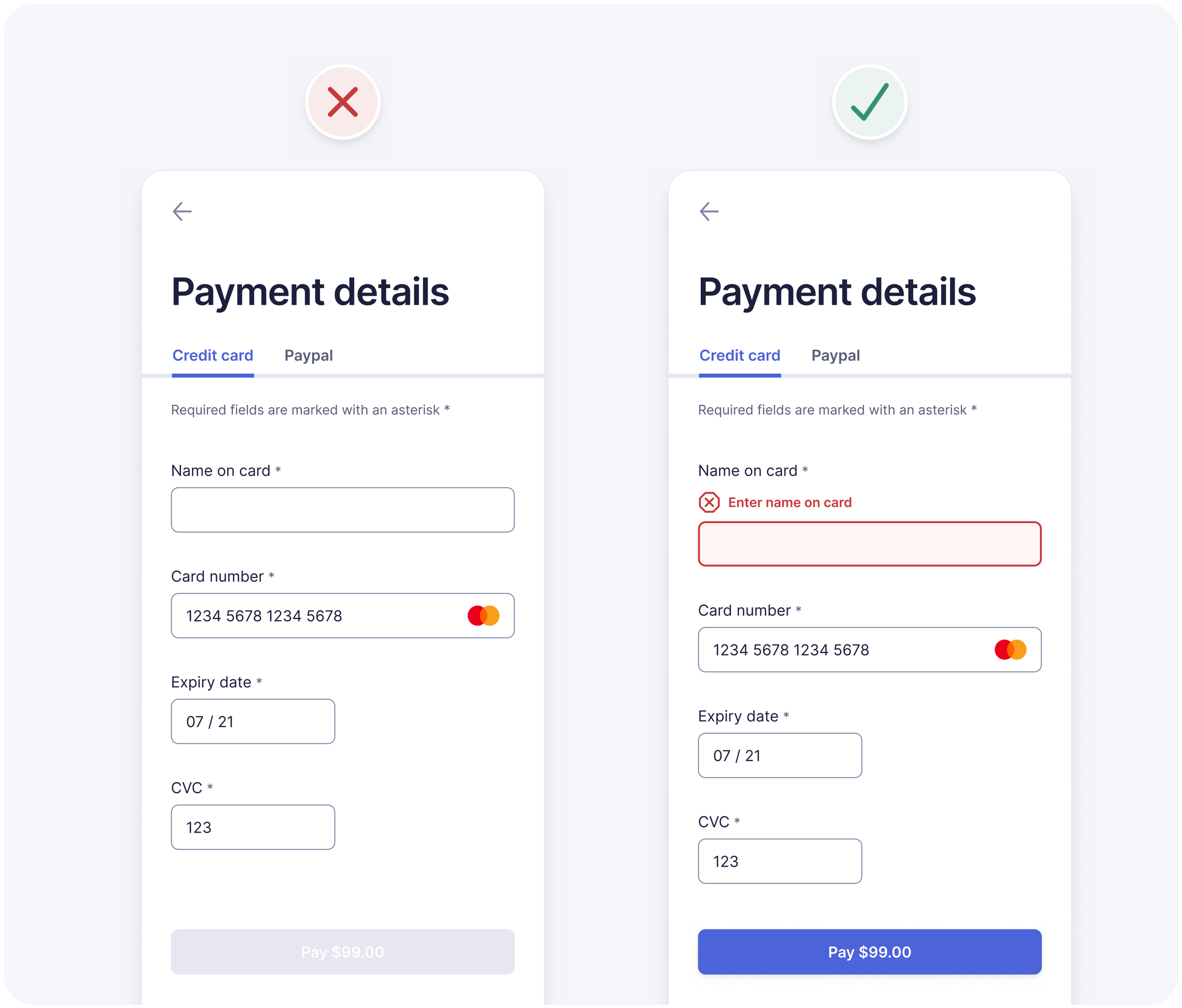
Here are some alternatives to disabled buttons to help avoid these issues.

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Enable buttons and validate on submit

Submit buttons on forms are often disabled until all fields are completed. This prevents people from submitting empty fields but can be problematic for the reasons mentioned previously. Instead of disabling the submit button, enable it and display error messages on submit.

In the following example, the user mistakenly missed the first field and is stuck wondering why they can’t press the pay button. Using an enabled button instead, instantly makes them aware that they missed the first field. This is a simple, accessible solution that prevents people from getting stuck.



Instead of disabling the submit button, enable it and display error messages on submit.

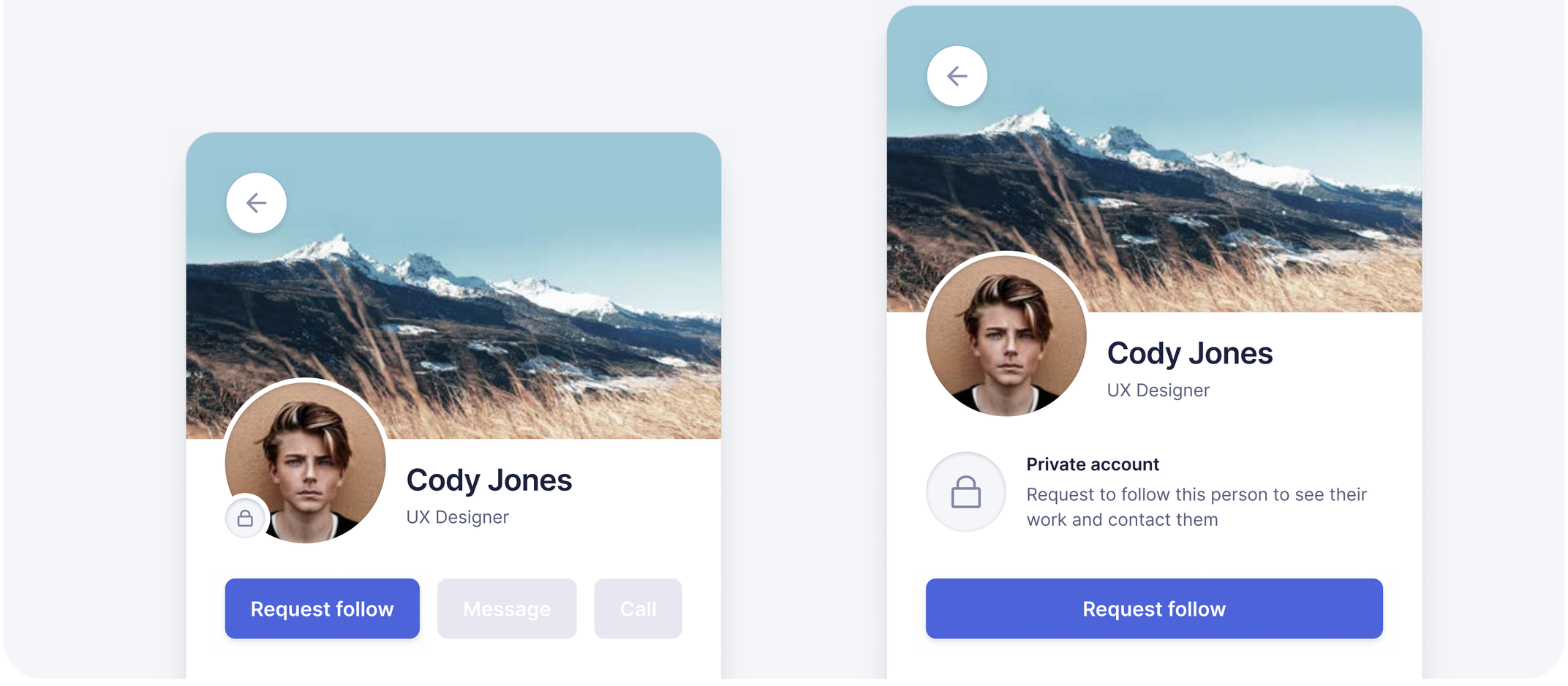
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Remove unavailable actions

Rather than disabling actions that aren't available, consider removing them and letting people know why they’re unavailable.

In the following example, some actions are disabled. They’re unavailable until the person accepts your request to follow them. Some people could be confused as to why the buttons can’t be pressed.

Remove the unavailable actions and let people know why they’re unavailable. This reduces confusion and creates a clear focus on the primary action.



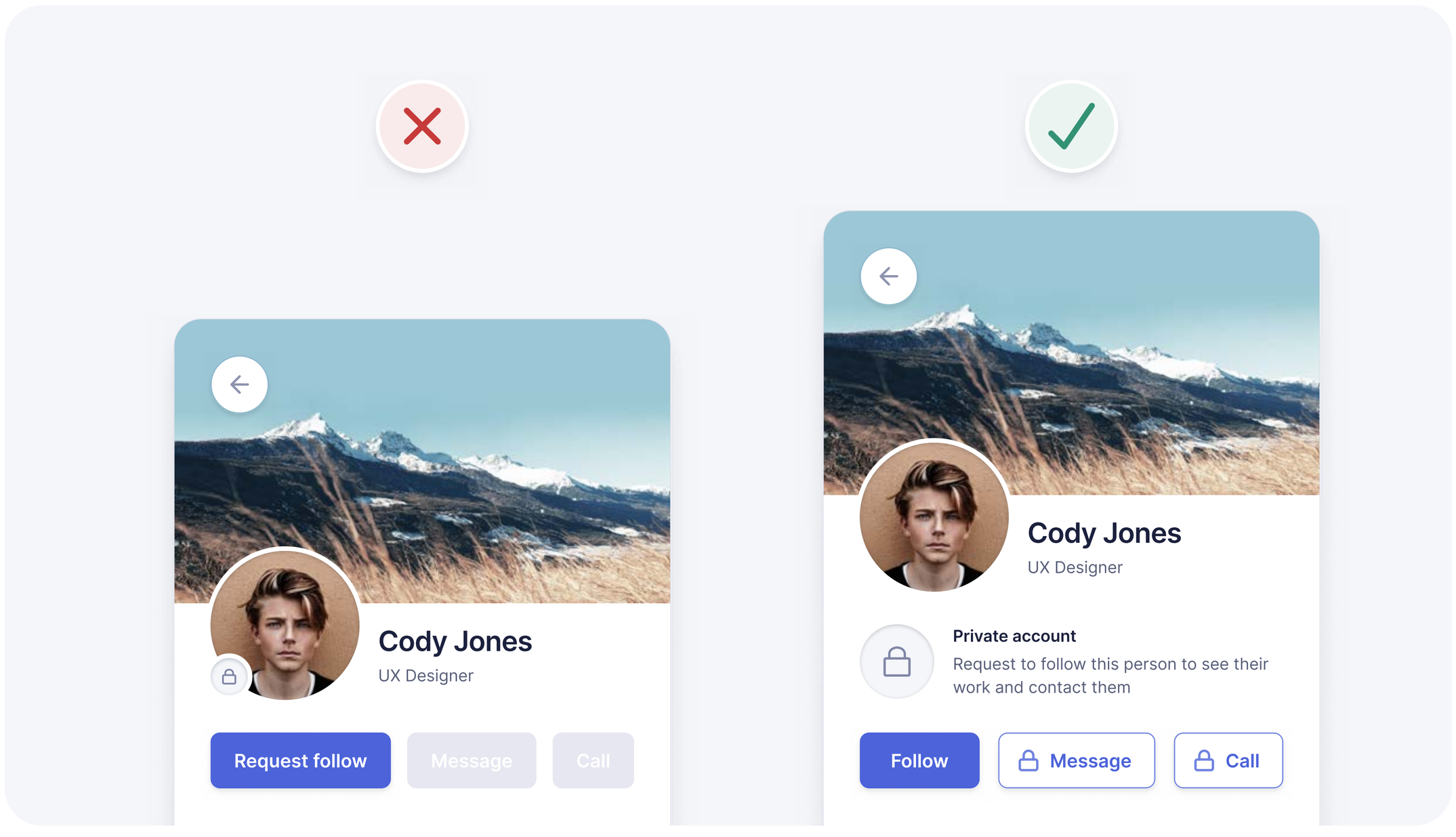
Remove unavailable actions and let people know why they’re unavailable

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Put a lock icon on unavailable actions

Another alternative to disabled buttons is to put a lock icon on regular buttons. This indicates that they're unavailable or locked.

Putting a lock icon on regular buttons ensures actions are discoverable and have sufficient contrast. It works especially well for premium features that require payment to get access to them.



Another alternative to disabled buttons is to put a lock icon on regular buttons

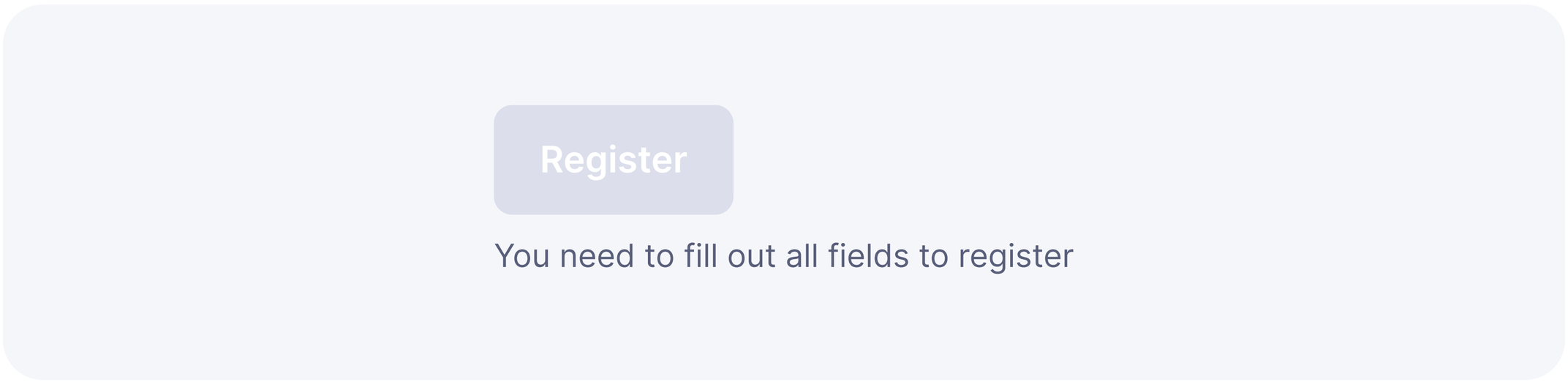
Be sure to let people know why the locked features are unavailable and how they can get access. A message could be placed near the locked buttons or displayed when the locked buttons are actioned.

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Make disabled buttons more inclusive

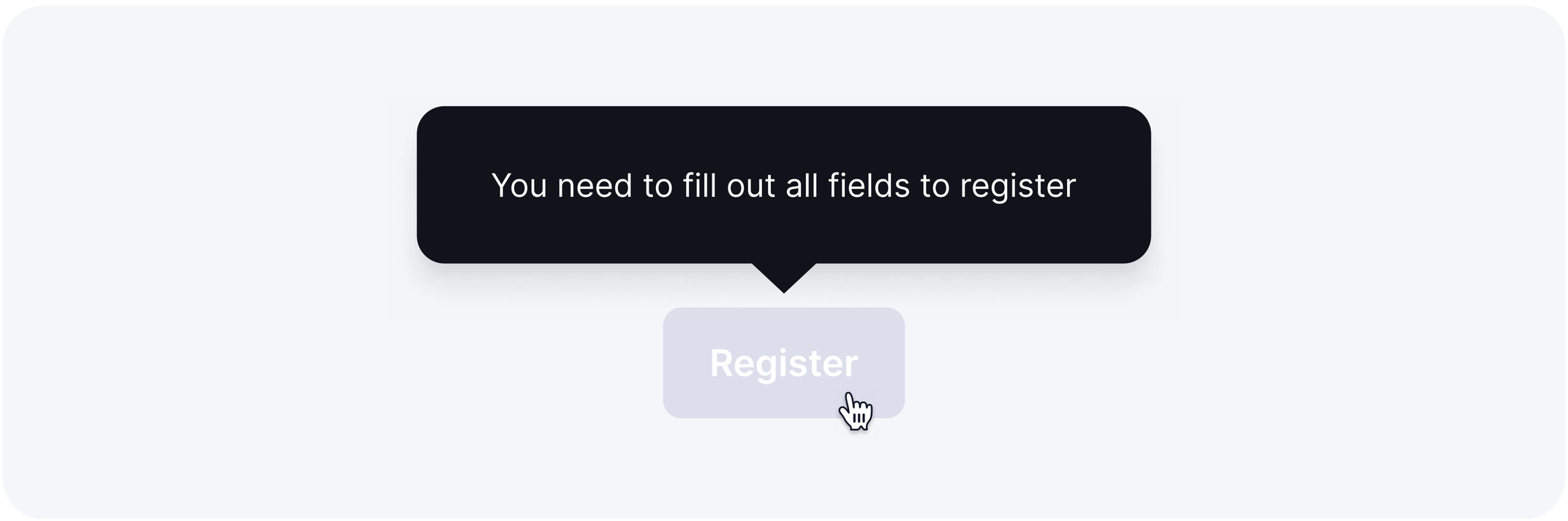
In most cases, it’s safest to avoid disabled buttons. However, if you need to use them, consider doing the following to make them more inclusive.

Make sure that people don’t get stuck by providing additional information to help them move forward. Include a message near the disabled button explaining why it’s unavailable and what they need to do to action it.



Include a message near disabled buttons explaining why they’re unavailable

Add a tooltip to the disabled button explaining why it’s unavailable and what people need to do to action it. A tooltip is a floating message that’s displayed on hover or press of an action.



Add a tooltip to the disabled button explaining why it’s unavailable

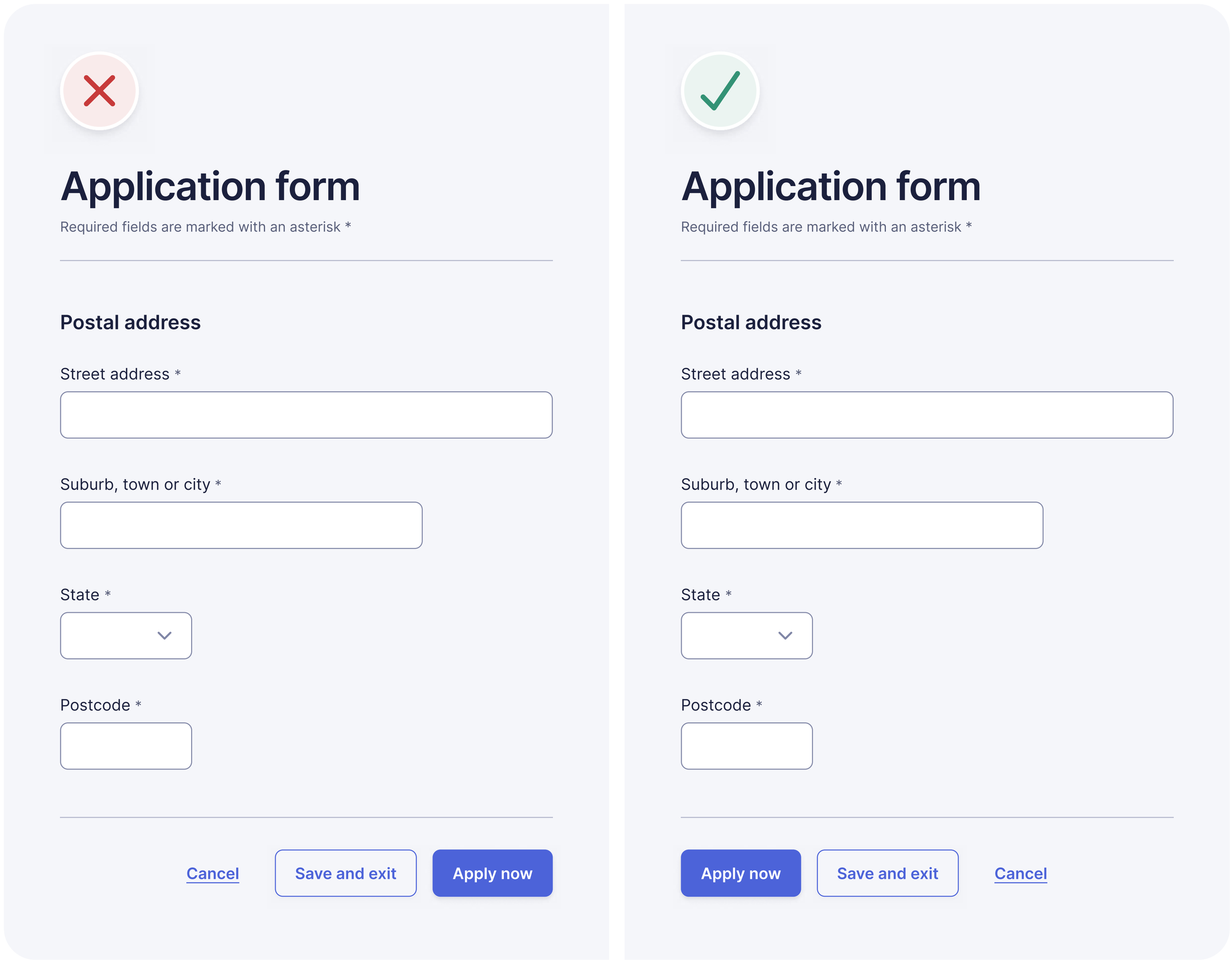
Also, make sure the button is keyboard accessible. This allows those using assistive technology to focus on the button and trigger the tooltip.

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Left align buttons

In most cases, you should order buttons from left to right, most important to least important, for the following reasons:

- English is read from left to right, downwards in an F-shaped pattern. People naturally look to the left edge as they move down the screen.
- Right aligned buttons can be missed on larger screens and by those using screen magnifiers.
- The most important button is the one that most people will need to use. Placing it first decreases the interaction cost for most people.

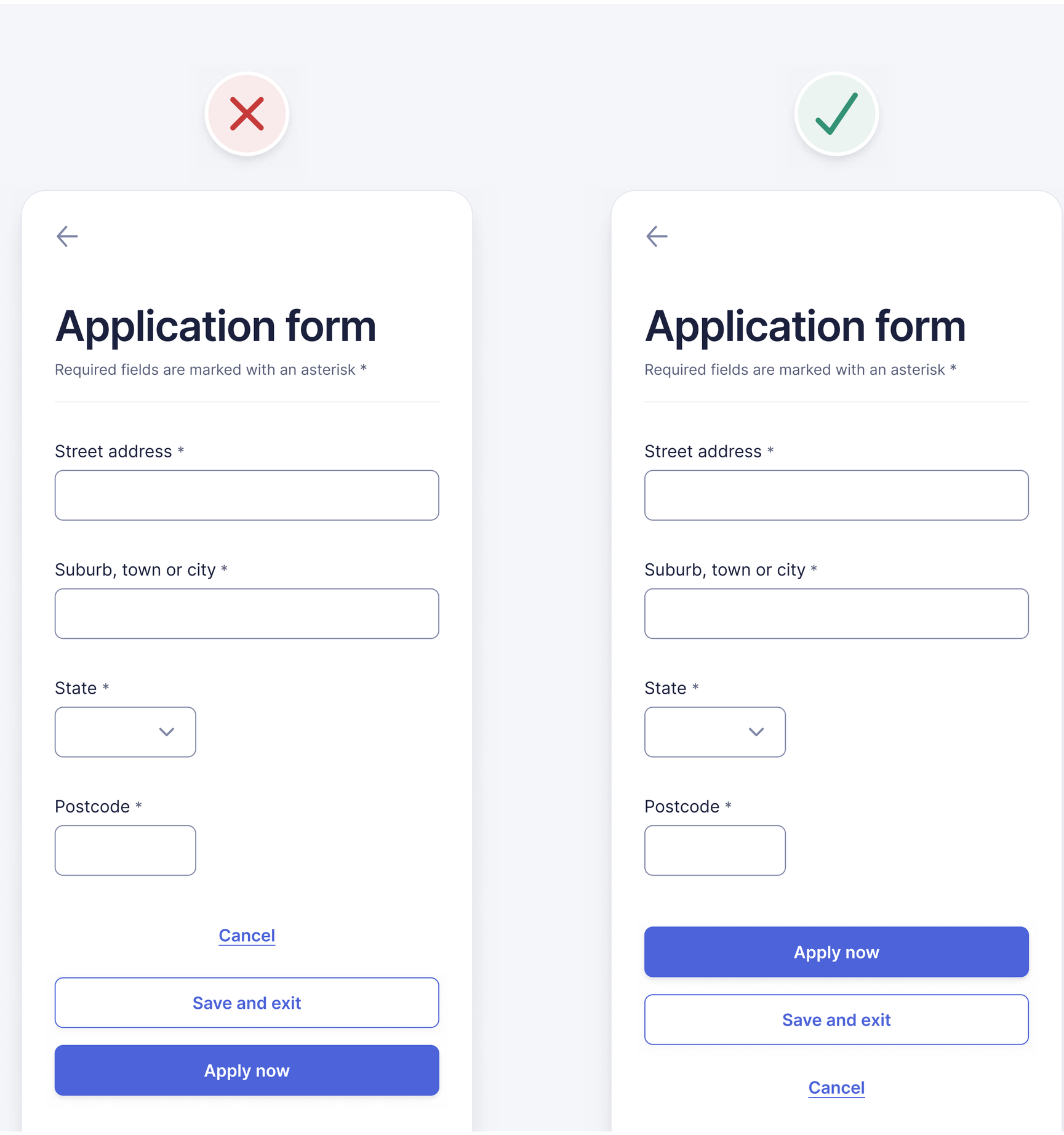


Right aligned versus left aligned buttons

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On mobile screens, stack buttons top to bottom, from most important to least important. This maintains the button order.

Sometimes people need to carry things while using their mobile, so they might only have one hand available. Making buttons full-width helps both left and right handed people to reach them easily with one hand.

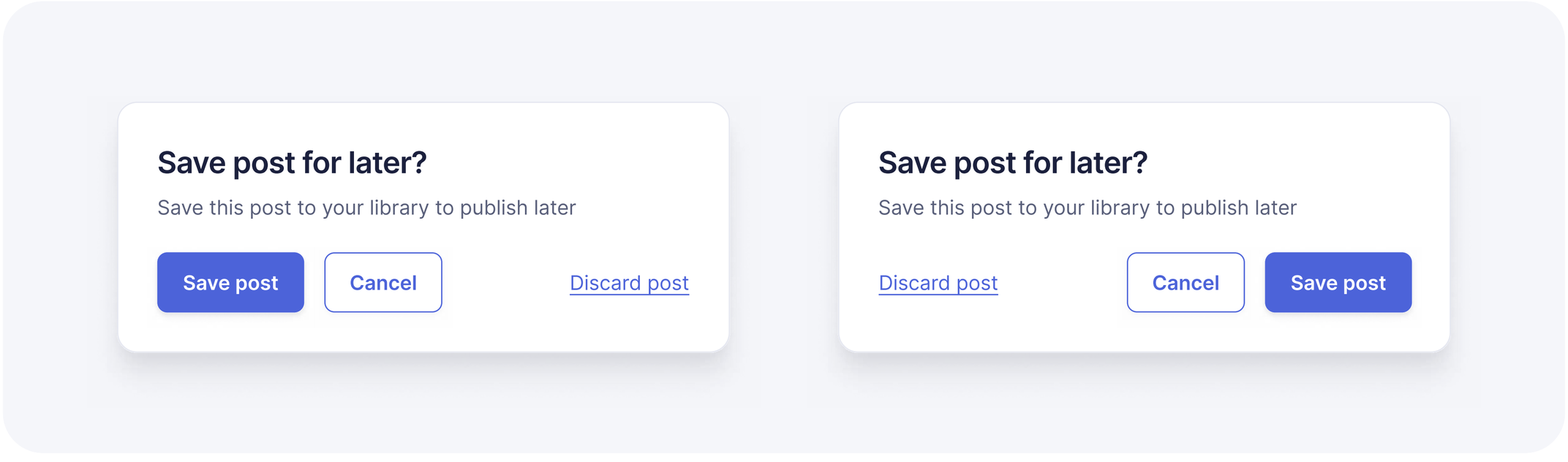


On mobile screens, stack buttons top to bottom, from most important to least important.

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What about small dialog boxes?

For consistency, I align buttons to the left on small dialog boxes. Right alignment can work well too, as long as buttons have a clear visual hierarchy. Let’s look at the rationale for each approach.



Reasons for left aligned buttons

Along with the reasons mentioned previously, there are others that support aligning buttons to the left:

- It’s a familiar pattern used widely on Windows OS and other websites.
- To maintain consistency with other forms that have left aligned buttons. Having buttons left aligned on some screens and right aligned on others in your product could be confusing.

Reasons for right aligned buttons

It’s often recommended to align buttons to the right on small dialog boxes for the following reasons:

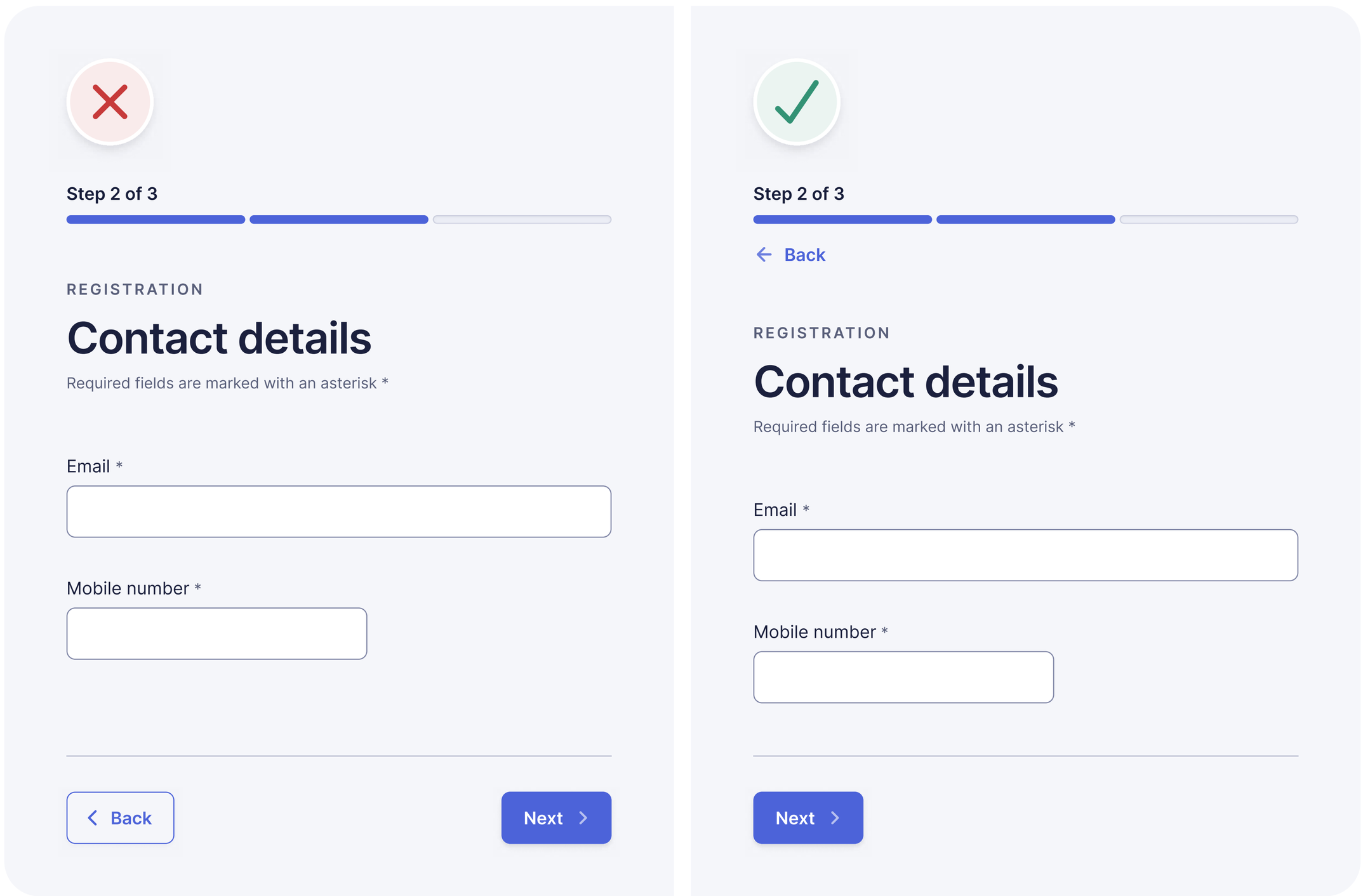
- To better indicate direction or momentum. The primary button usually takes the user forward (right), while the secondary button takes them backward (left).
- It’s a familiar pattern used widely on operating systems like Mac OS.

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Left align buttons on multi-step forms

On multi-step forms, the primary button is often right aligned and the “Back” button is left aligned. This is problematic for the following reasons:

- It can cause people to mistakenly click the back button as it’s in such a prominent position. This could cause them to lose the data they just entered into the form.
- It places the primary button further away from the form fields, increasing the interaction cost to press it (especially on large screens).
- Right aligned buttons could be missed on large screens and by those using screen magnifiers.



Right versus left alignment of the primary button on a multi-step form

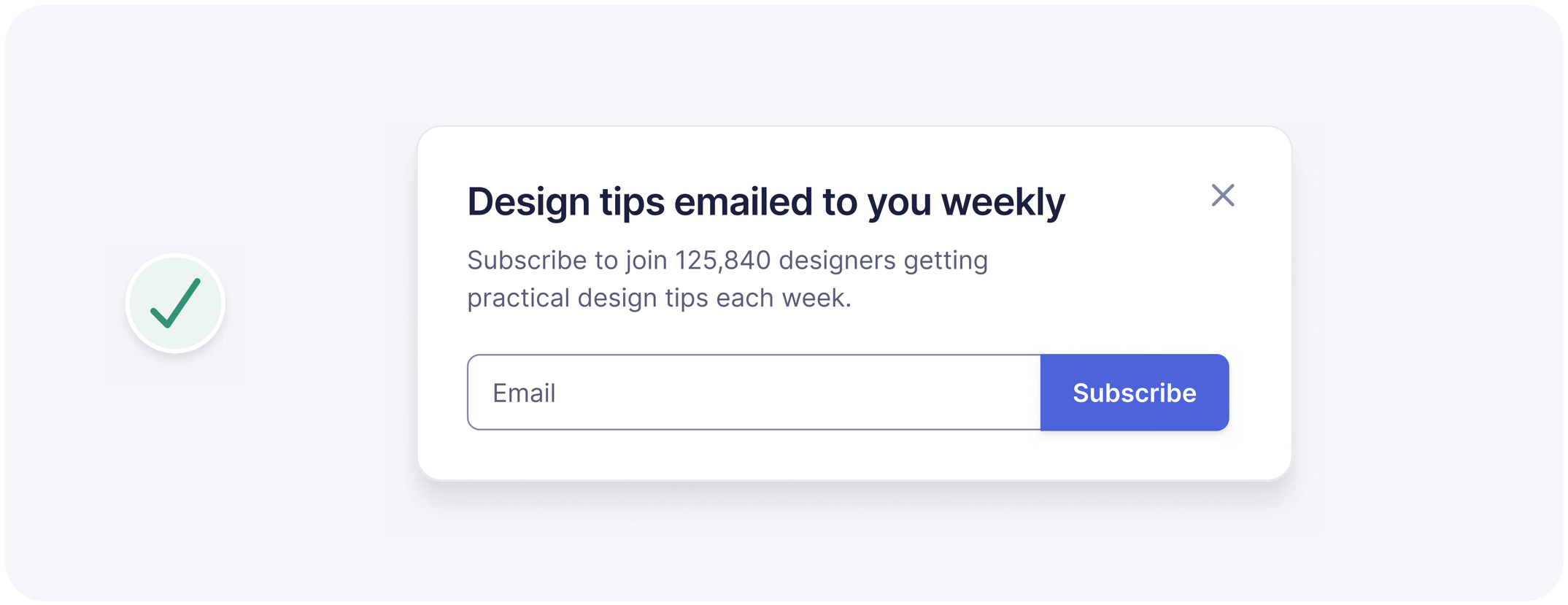
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Stay consistent and keep the primary button left aligned. Put a tertiary “Back” button at the top left of the form for the following reasons:

- It’s a common position for the back button on mobile, website browsers, and breadcrumb navigation (a trail of pages a user has visited).
- People may need to go back to check something before filling out the next form. This placement allows them to go back without having to scroll or use the keyboard to tab to the bottom of the form.
- There’s less chance of people mistakenly clicking the back button and losing data after they’ve completed the form.

Exceptions to the left aligned button guideline

For single form fields like search fields and email subscriptions, it’s common to put the primary button on the right of the field to save space. Connecting the primary button to the field reinforces the close relationship between the field and the button and helps ensure it isn’t missed.



The primary button is attached to the right of the subscribe field to save space

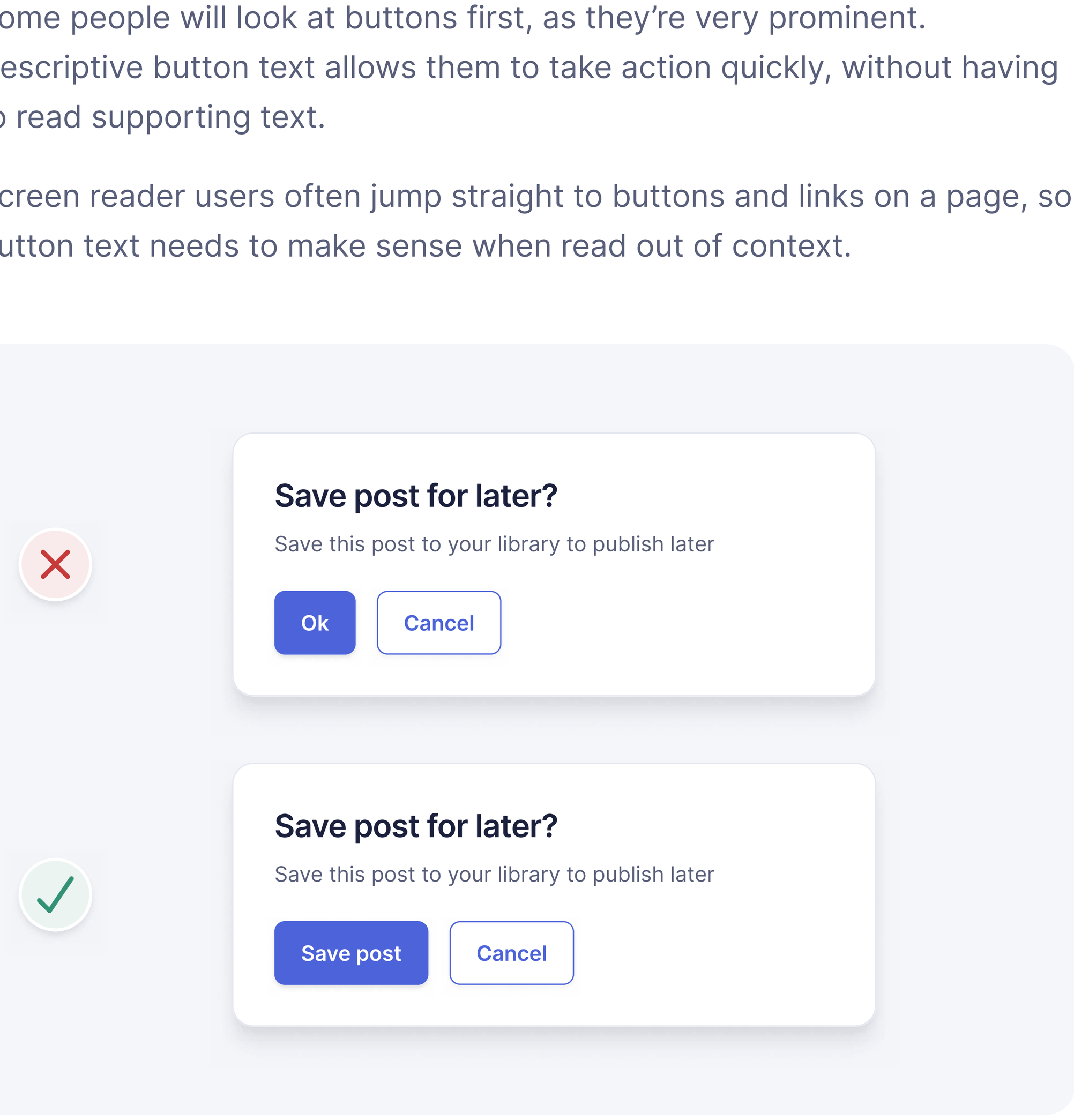
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Ensure button text describes the action

Button text should clearly describe the action being taken so that it’s meaningful when read out of context. A simple rule for button text that works well in most cases, is a verb (action) followed by a noun (thing).

For example, “Save post”, “Discard message”, and “Edit article”. Button text should be descriptive for the following reasons:

- Some people will look at buttons first, as they’re very prominent. Descriptive button text allows them to take action quickly, without having to read supporting text.
- Screen reader users often jump straight to buttons and links on a page, so button text needs to make sense when read out of context.



Vague button text versus descriptive button text

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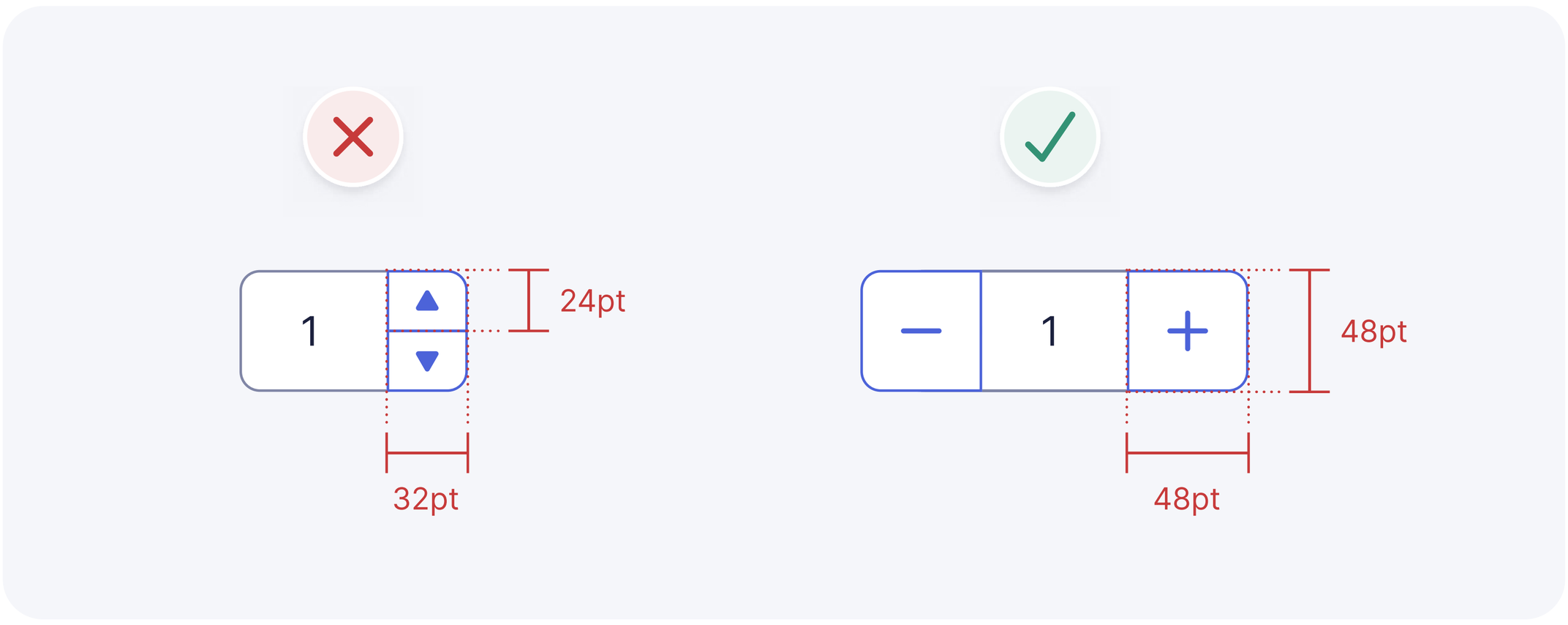
Ensure buttons have a sufficient target size

Small targets are more difficult to click or touch than large ones. This is especially true for those with impaired motor control, or even someone holding their phone with one hand and using their thumb.

Try to stick to the following guidelines to ensure buttons (and other interactive elements) have a sufficient target size:

- Make buttons at least 48pt by 48pt in size. This aligns with an 8pt grid and is slightly larger than the WCAG recommendation of 44pt by 44pt.
- Make frequently used buttons even larger to improve efficiency and to help avoid them being missed.
- Separate buttons by at least 8pt to help prevent people mistakenly pressing the wrong one.

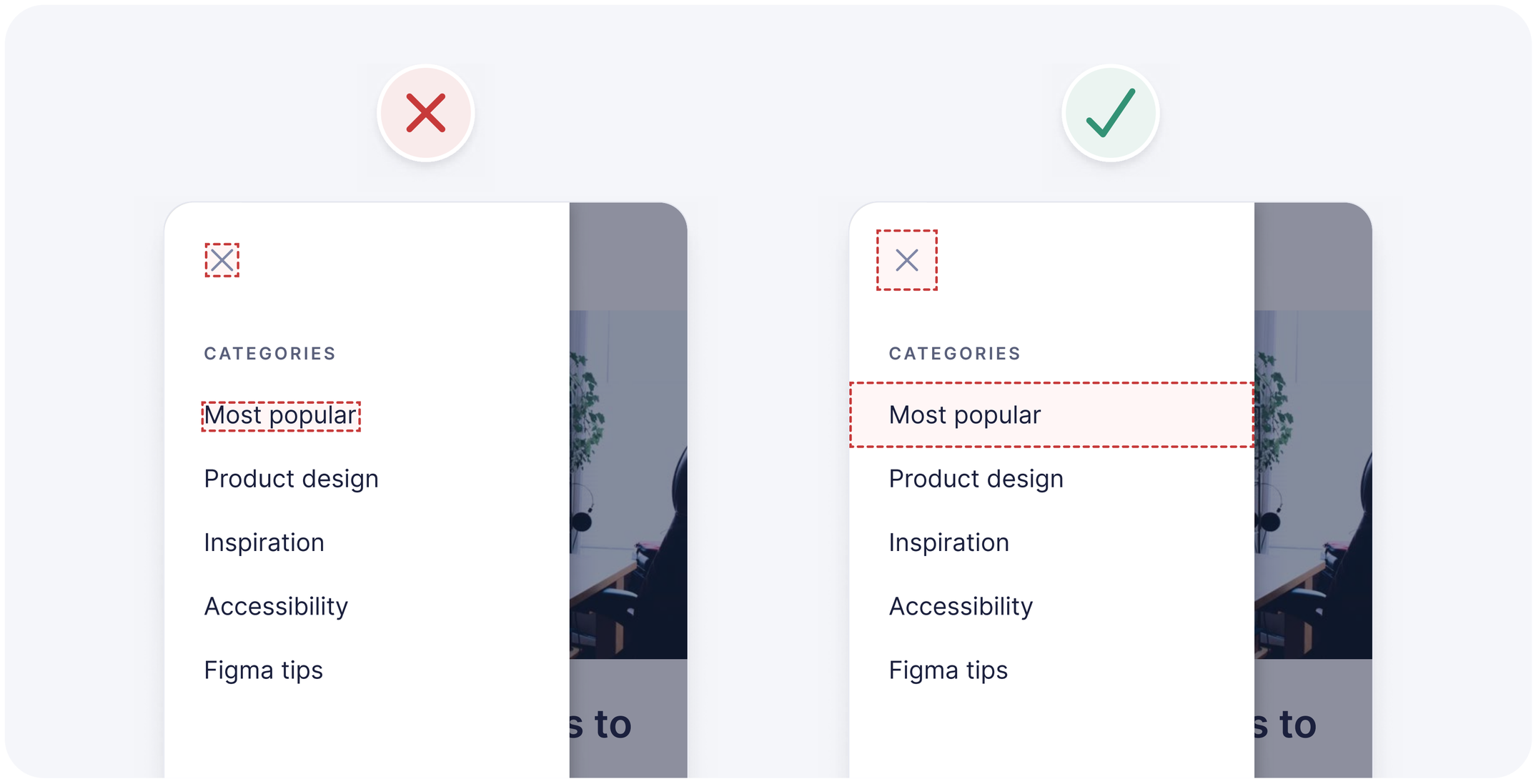
In the following example, the up and down arrows in the stepper component don’t have a sufficient target size and are too close together. Increasing their target size and separating them makes them easier and faster to press.



Insufficient versus sufficient button size

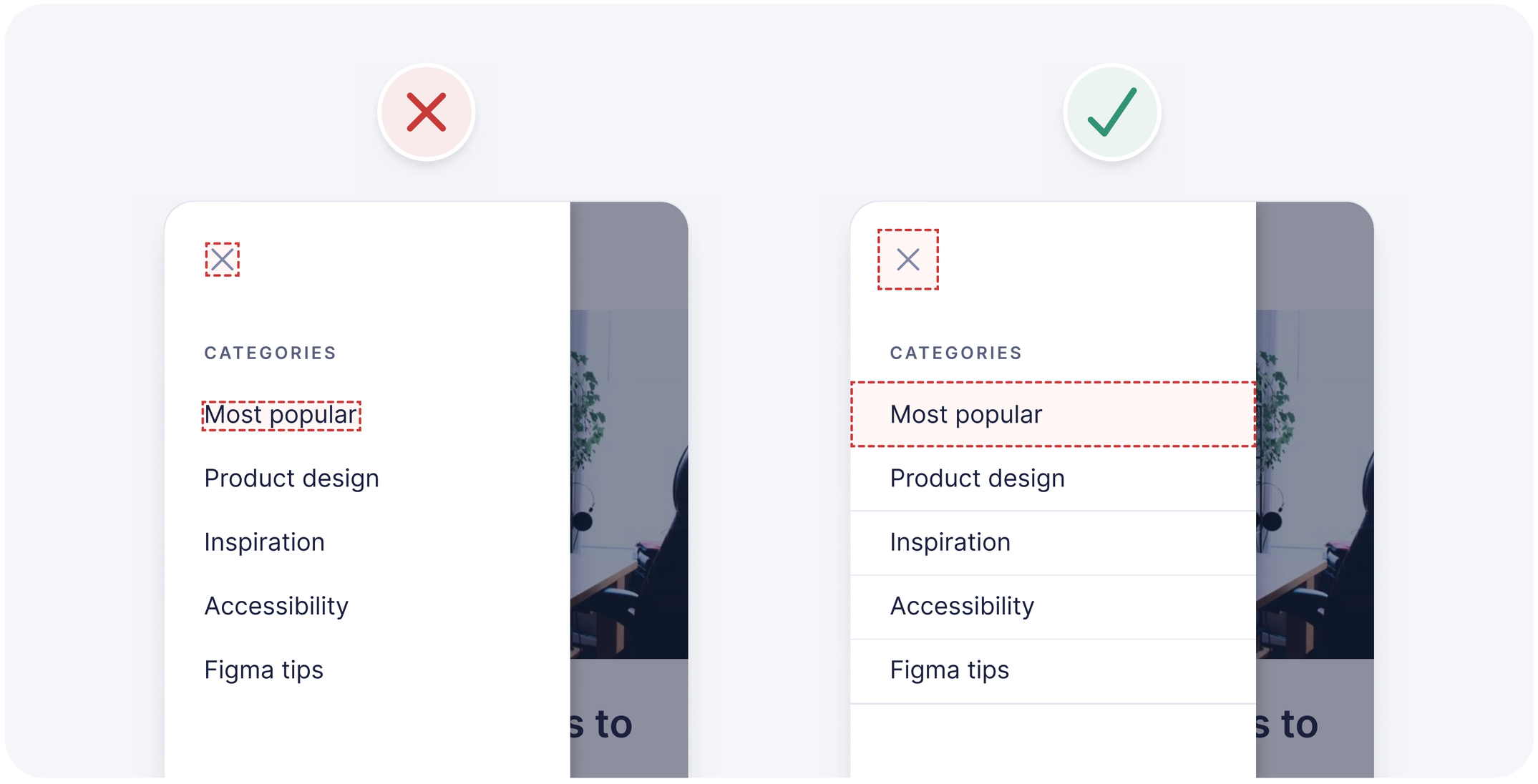
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For small interactive elements, extend the target area beyond the visual bounds of the element. This means that even if someone misses the element, there’s a good chance they’ll still trigger the action.



For small interactive elements, extend the target area beyond the visual bounds of the element.

Indicate the target area to further reduce the interaction cost. Without clear indication, people may not realise it's there. If the target still looks small, they may exert more effort and spend additional time trying to hit it precisely.



Indicate the target area to further reduce interaction cost

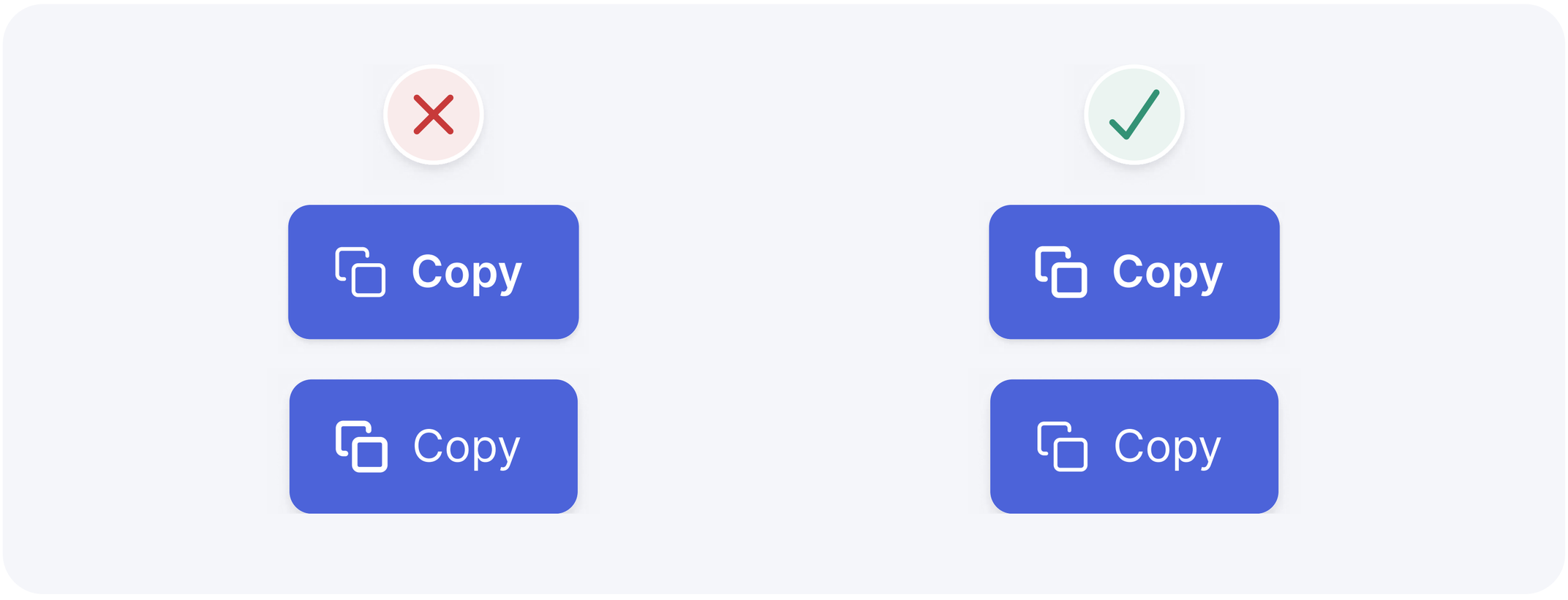
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Balance icon and text pairs

When pairing icons with text, try to ensure they have the same visual prominence for a more balanced and cohesive look.

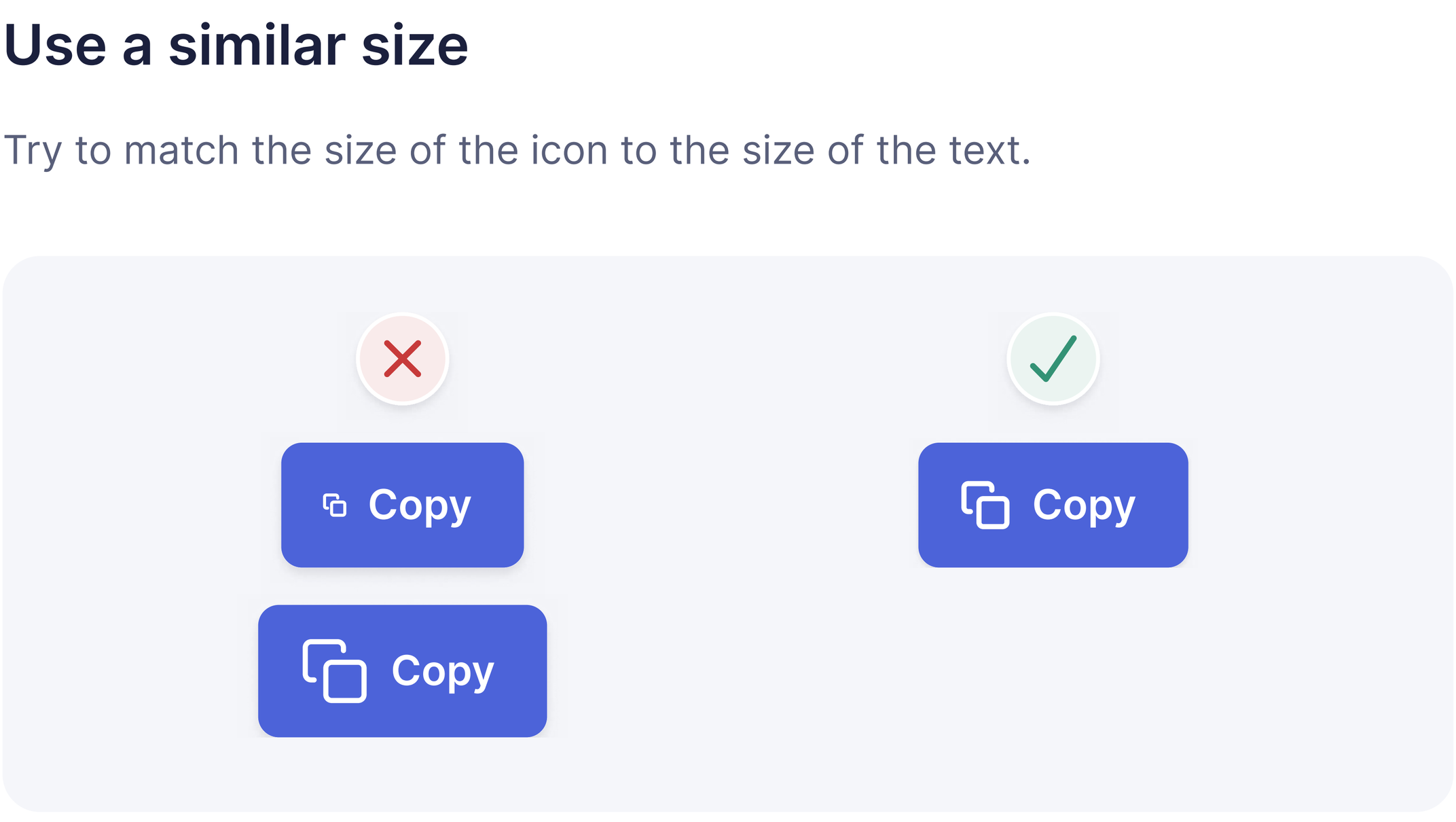
Use a similar weight

Try to use a similar weight, or thickness, for icons and text. This helps group them together as they look similar. It also helps balance them visually.



Use a similar size

Try to match the size of the icon to the size of the text.



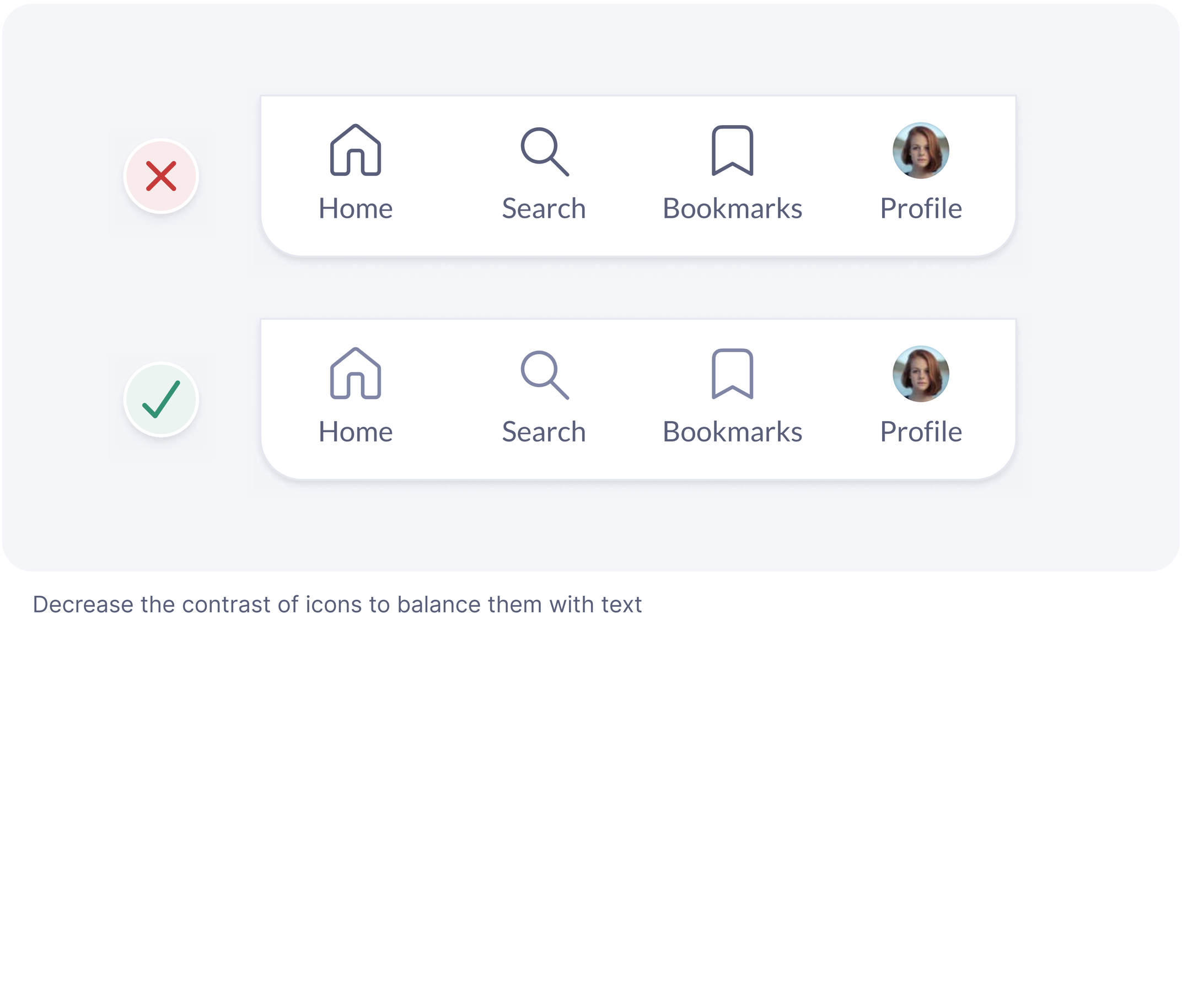
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Vary the contrast

Sometimes it’s difficult to match the weight and size of icons and text. Luckily, you can also use contrast to help create a balance between the two.

In the example below, the icons are larger and thicker than the text they’re paired with. This makes the icons slightly more prominent than the text.

To balance the pair, the contrast of the icons is decreased. Rather than using the “Text weak” colour variation from the solid colour palette for both icons and text, the “Stroke strong” colour variation is used for icons.



Decrease the contrast of icons to balance them with text

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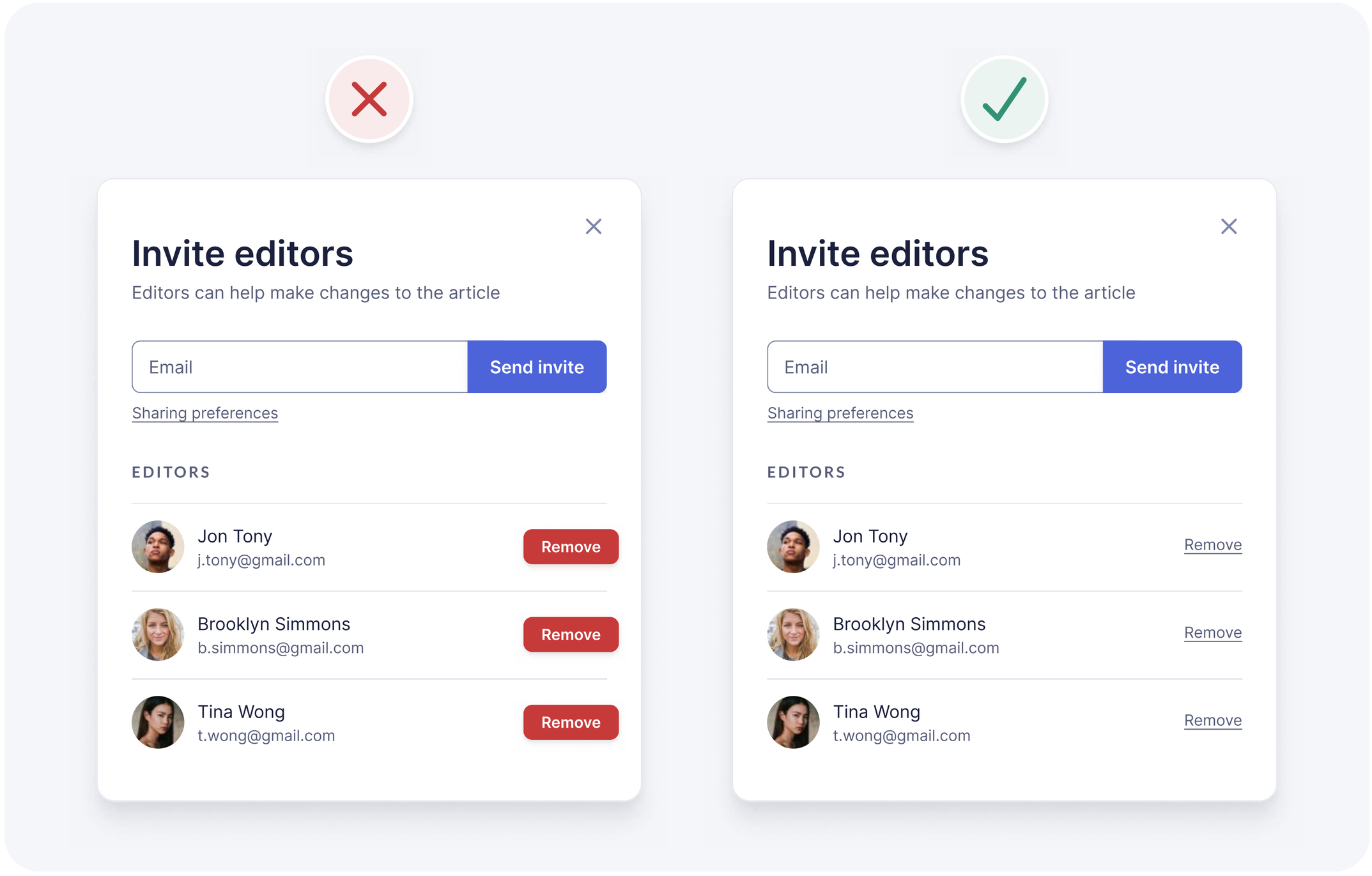
Add friction to destructive actions

A destructive action is one that causes harm or can’t be undone, like permanently deleting important information. Adding friction involves increasing the interaction cost required to perform an action. To help prevent people from mistakenly performing destructive actions, introduce increasing amounts of friction based on the severity of the action.

Let’s go through the different levels of friction.

Initial friction

Before a destructive action is taken, introduce friction to help prevent people from mistakenly actioning it. This generally involves making the action less prominent, moving it further away, or progressively disclosing it. Don’t colour the action red, as this makes it more prominent.

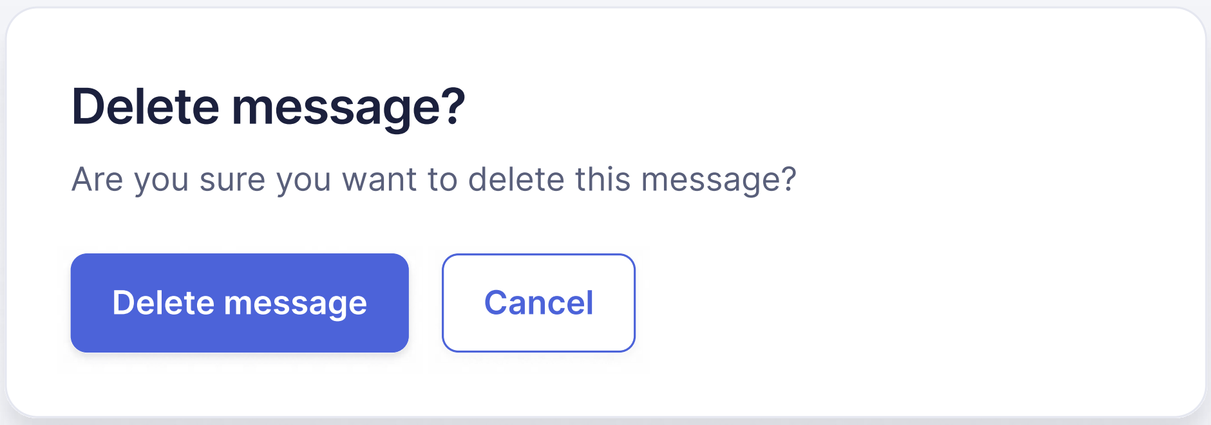


Make destructive actions less prominent to prevent people from mistakenly actioning them

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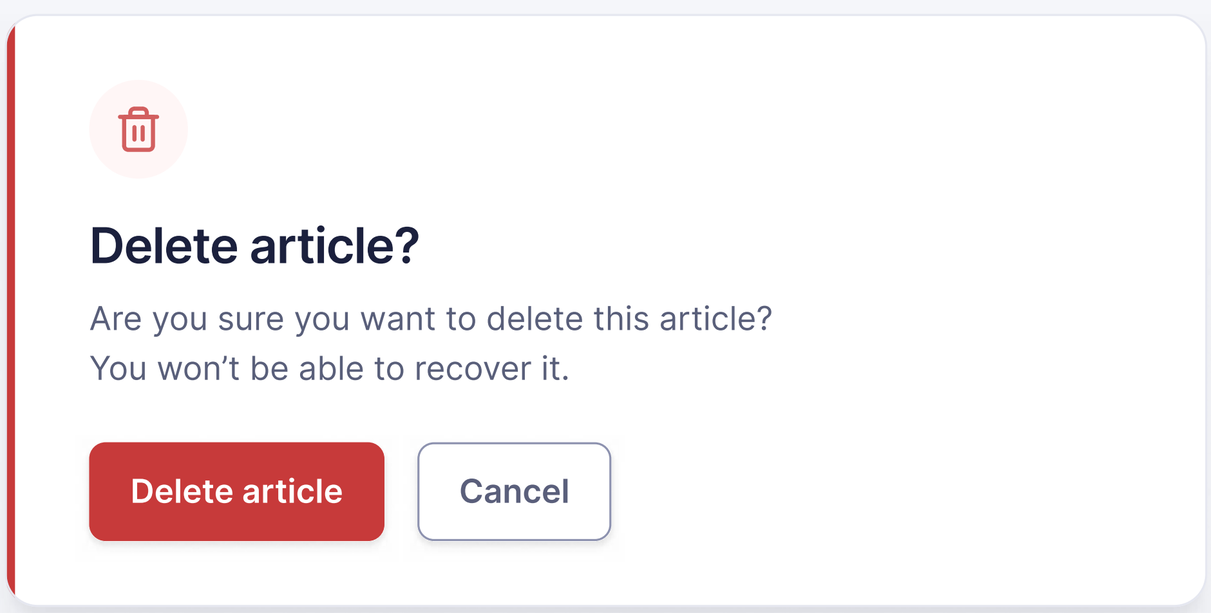
Light friction

For less serious actions, simply ask people to confirm the action before performing it.



Moderate friction

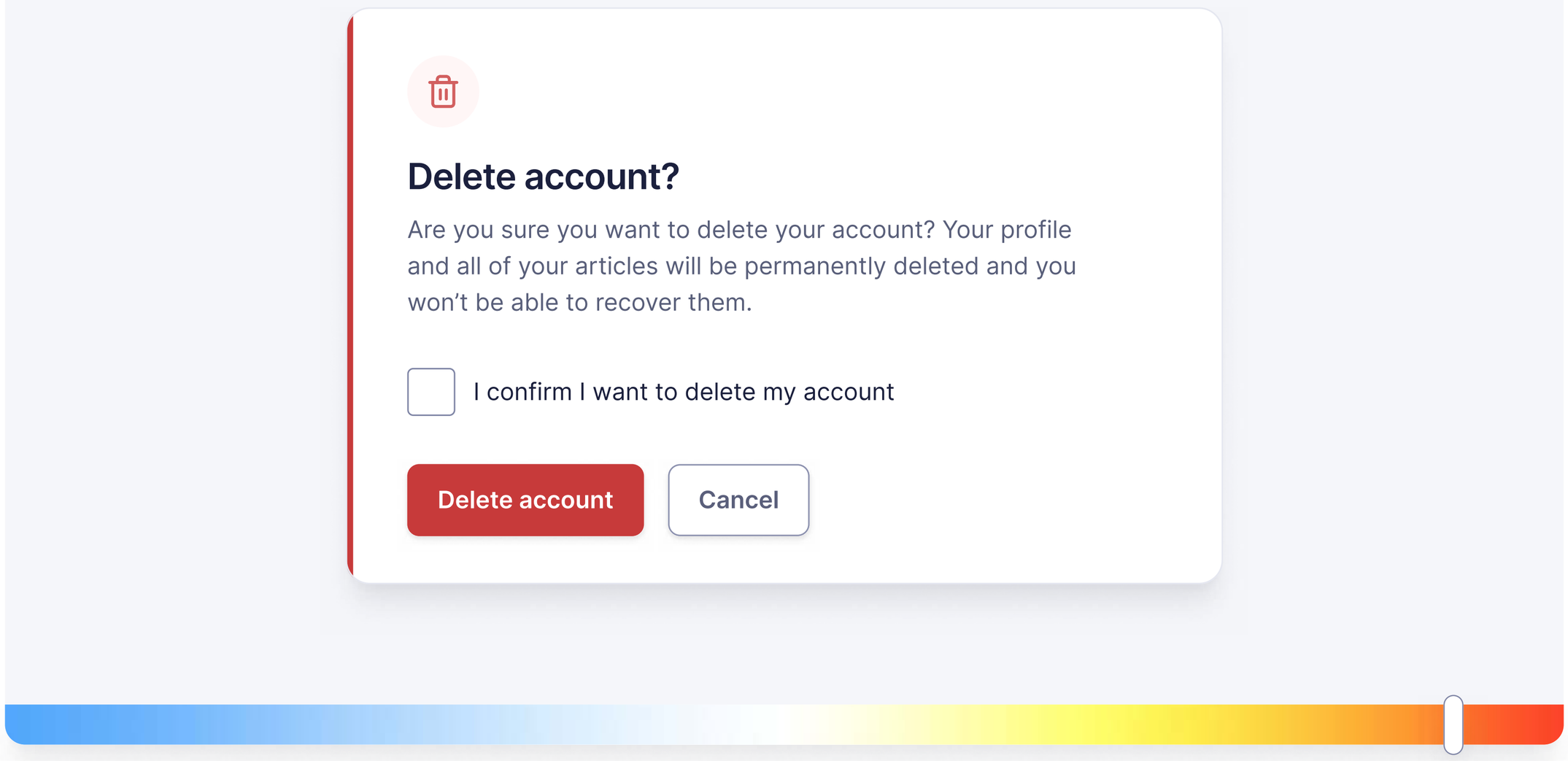
To add further friction, highlight the confirmation message in red. This will warn people that the action they’re about to take is destructive.



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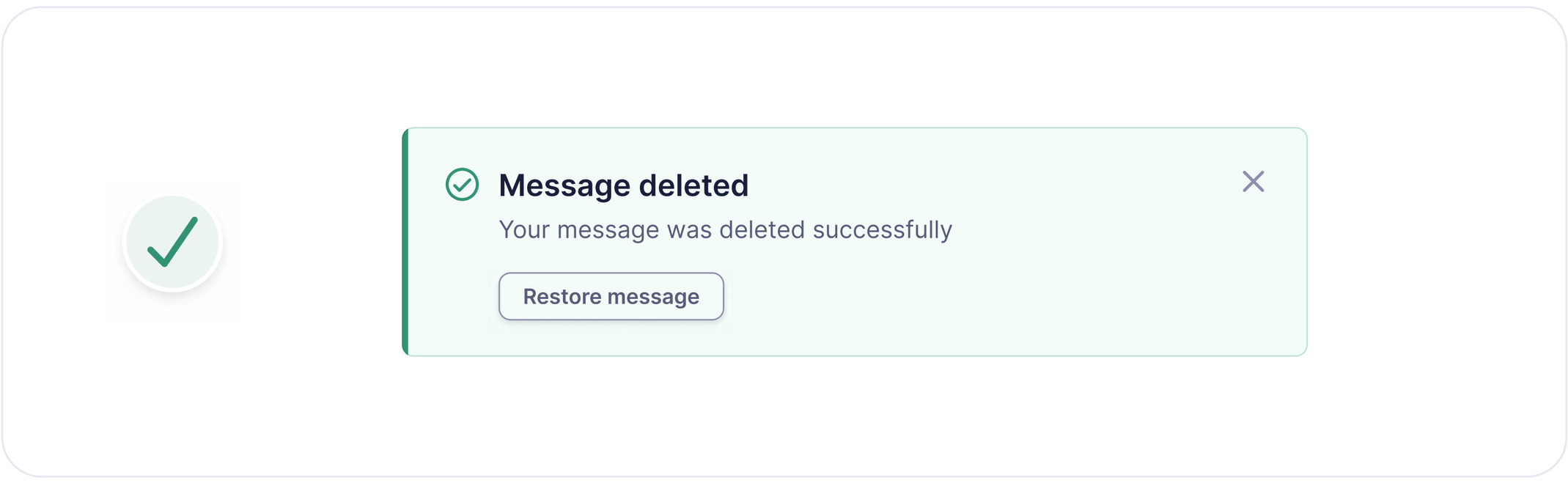
Heavy friction

For very destructive actions, use red and include a checkbox. The checkbox must be selected before the destructive action can occur. Even if someone mistakenly presses the button, the action won’t be performed.



Allow people to undo destructive actions

Even with added friction, mistakes will still be made. So, consider allowing people to undo or reverse destructive actions. This generally takes more time and effort to implement, but it removes a lot of risk.



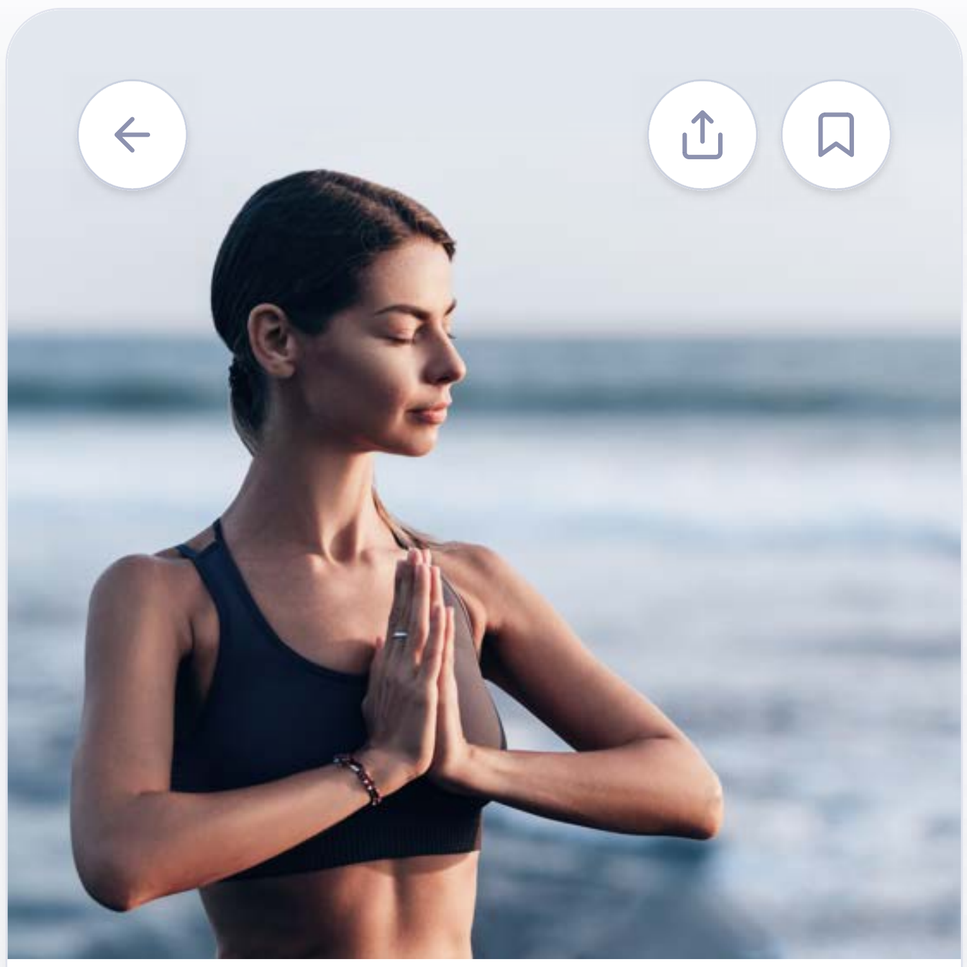
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TUTORIAL - BUTTONS

Apply what you've just learned

Let's apply some of the guidelines you've learned to continue improving the fitness app example.

Here's where you left off



Morning yoga workout

With Brooklyn Sims

5.0 (23 reviews)

20 mins | Beginner | Ambient | None

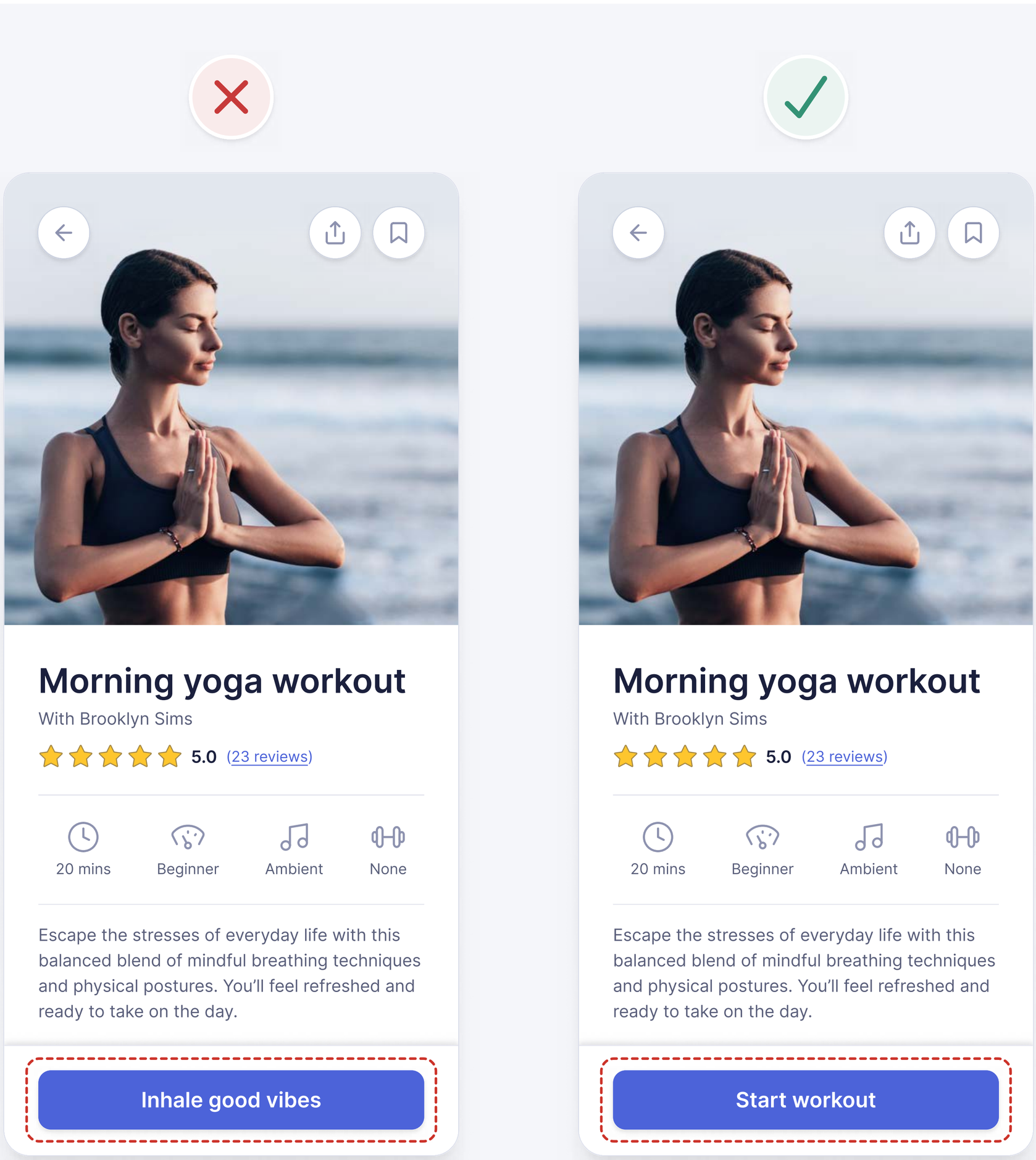
Escape the stresses of everyday life with this balanced blend of mindful breathing techniques and physical postures. You'll feel refreshed and ready to take on the day.

Inhale good vibes

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Ensure button text describes the action

In the fitness app example, the meaning of the button text could be confusing to some, as it doesn’t clearly describe the action being taken. Use a clear and descriptive label to reduce confusion.



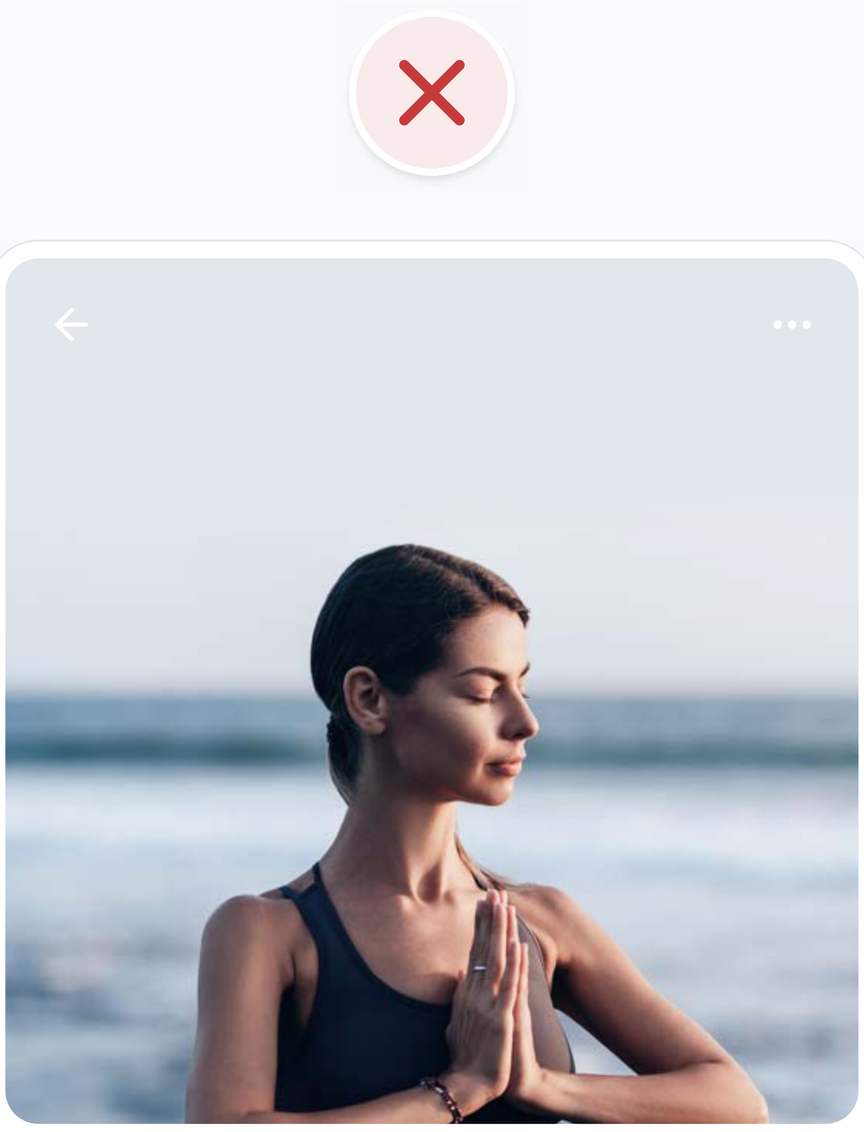
Unclear button text is changed to be clear and descriptive

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CONGRATULATIONS

You did it!

With a handful of simple yet powerful guidelines, you've quickly fixed a bunch of problems and created an intuitive, accessible, and beautiful design.



Morning Yoga Workout

WITH BROOKLYN SIMS

5.0 (23 reviews)

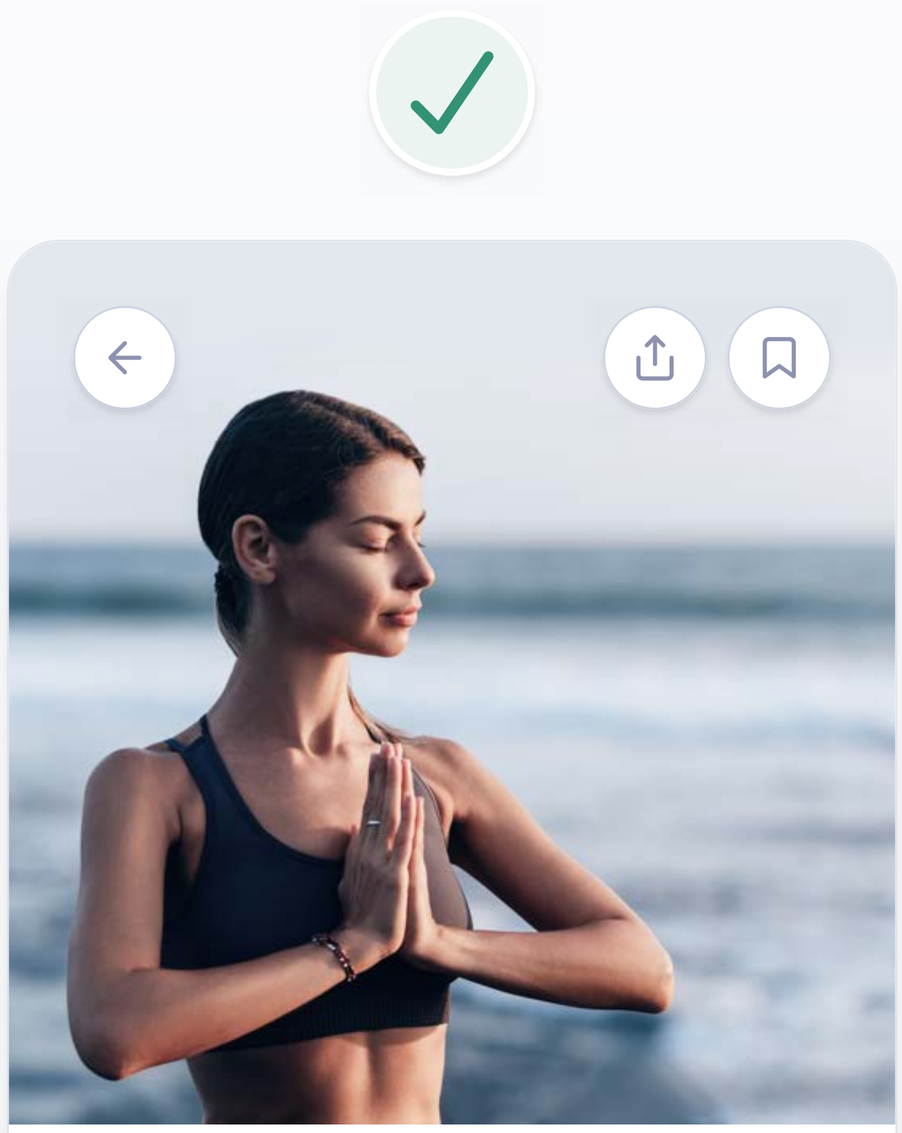
Inhale Good Vibes

20 mins | Beginner | Ambient | None

Escape the stresses of quotidian existence with this harmonious fusion of contemplative pranayama techniques and corporeal postures. You will feel rejuvenated and ready to take on the day.

The session commences with a succinct centering exercise, fostering a seamless detachment from external distractions and inviting full immersion into the present moment.

You shall cultivate an unwavering focus on your breath, laying the foundation for the ensuing practice.



Morning yoga workout

With Brooklyn Sims

5.0 (23 reviews)

20 mins | Beginner | Ambient | None

Escape the stresses of everyday life with this balanced blend of mindful breathing techniques and physical postures. You'll feel refreshed and ready to take on the day.

Start workout

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Chapter summary

- Define 3 button weights to indicate the importance of actions. Ensure button styles are familiar, accessible, and have a clear visual hierarchy that isn’t dependent on colour alone.
- Try to avoid disabled buttons, as they can cause people to get stuck. Instead, enable buttons and validate on submit.
- Order buttons from left to right, most important to least important to reduce interaction cost. This also helps avoid buttons being missed on larger screens and by those using screen magnifiers.
- Ensure button text clearly describes the action being taken, so it’s meaningful when read out of context. Use a verb (action) followed by a noun (thing).
- Try to ensure buttons have a sufficient target size. Make them at least 48pt by 48pt in size and separate them by at least 8pt to help prevent people mistakenly actioning the wrong one.

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Your progress

7 of 8 chapters completed

- Fundamentals
- Less is more
- Colour
- Layout and spacing
- Typography
- Copywriting
- **Buttons**
- 8 Forms

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CHAPTER 8

Forms

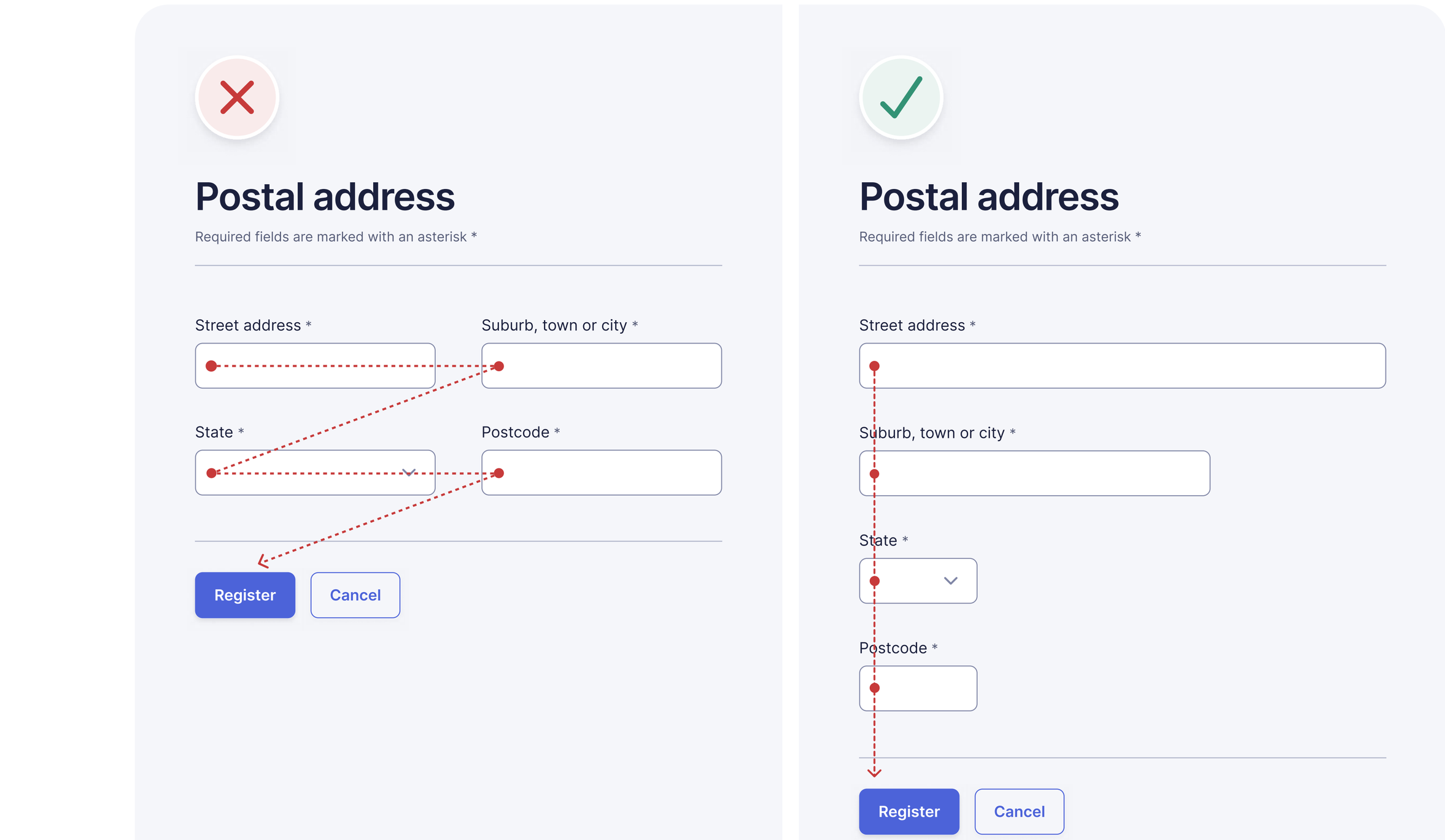
Form patterns and principles to help people complete forms more quickly and easily

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Stack forms in a single column layout

Form fields are often arranged in multiple columns to save space. A single column form layout is the safest, most efficient, and simplest form layout for the following reasons:

- It’s more efficient to complete, as it decreases interaction cost by maintaining a consistent downward momentum.
- It decreases cognitive load, as people don’t need to think about what field to fill out next. They simply move down the page in a straight line.
- Since there’s only a single downward path to fill out the form, there’s less chance of people missing fields. Those using screen magnifiers have a limited view of the screen and could miss fields in a second column.

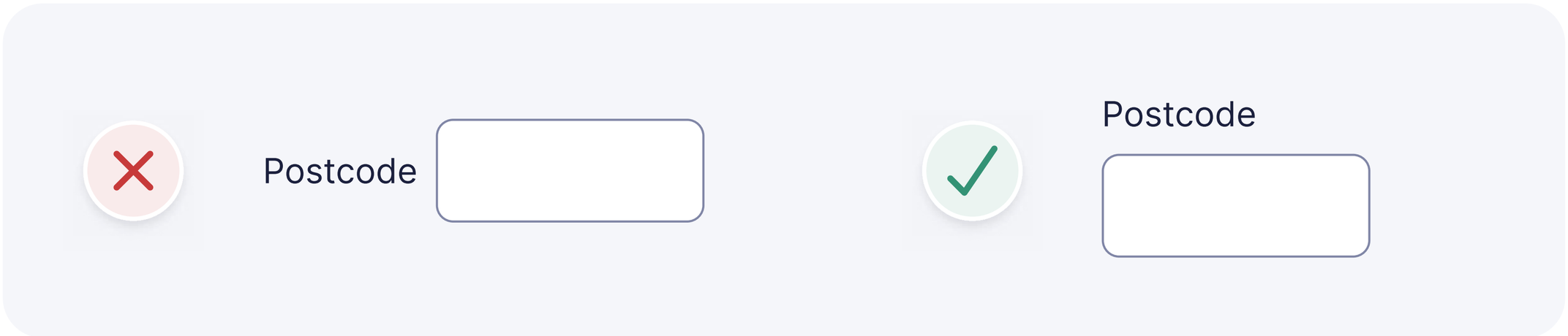


Multi column versus single column form examples

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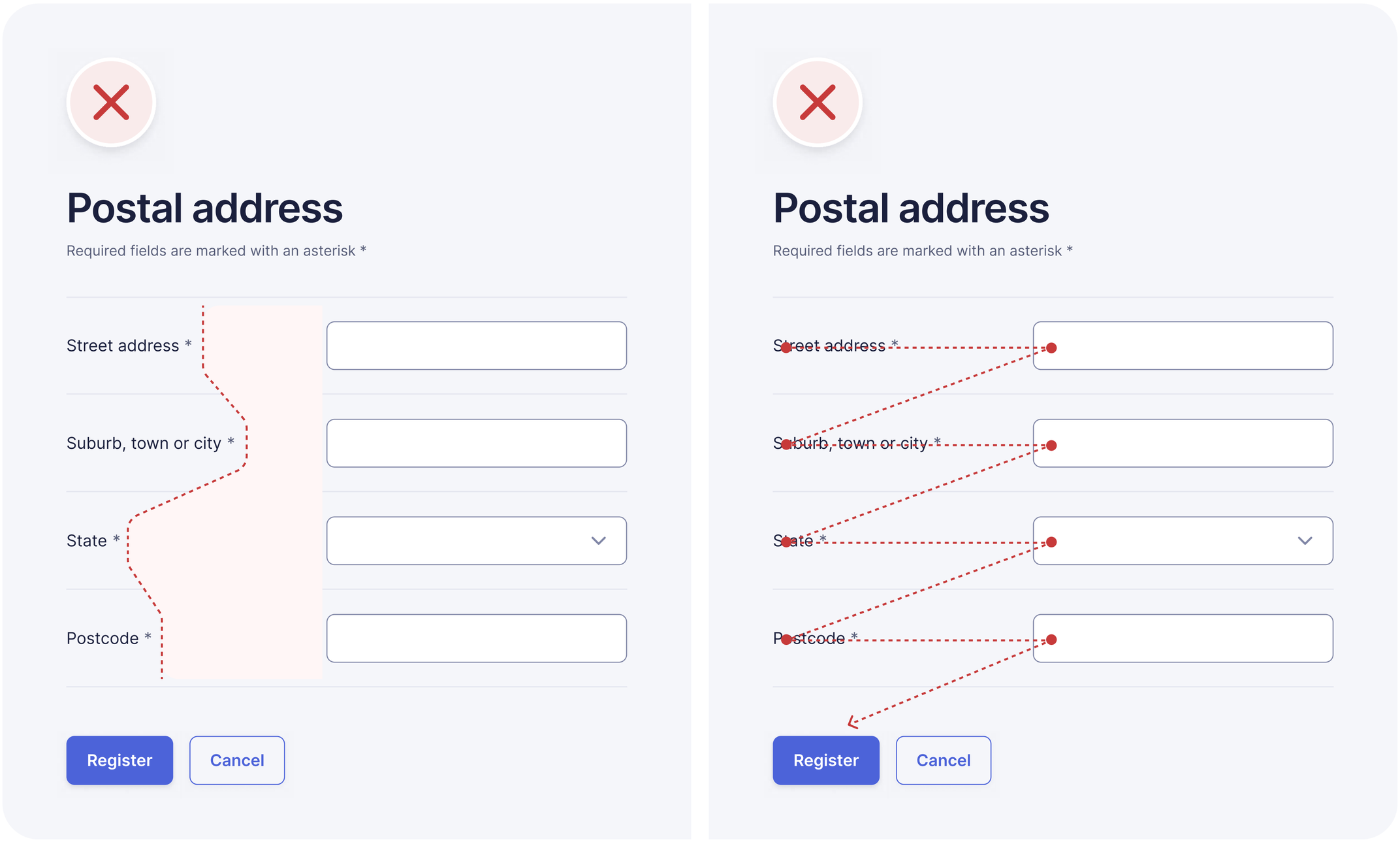
Stack labels on top of inputs

Labels should also be stacked vertically on top of inputs. Avoid placing labels to the left of form fields, as it can increase cognitive load and interaction cost. This slows down form completion times.



Stack labels on top of inputs

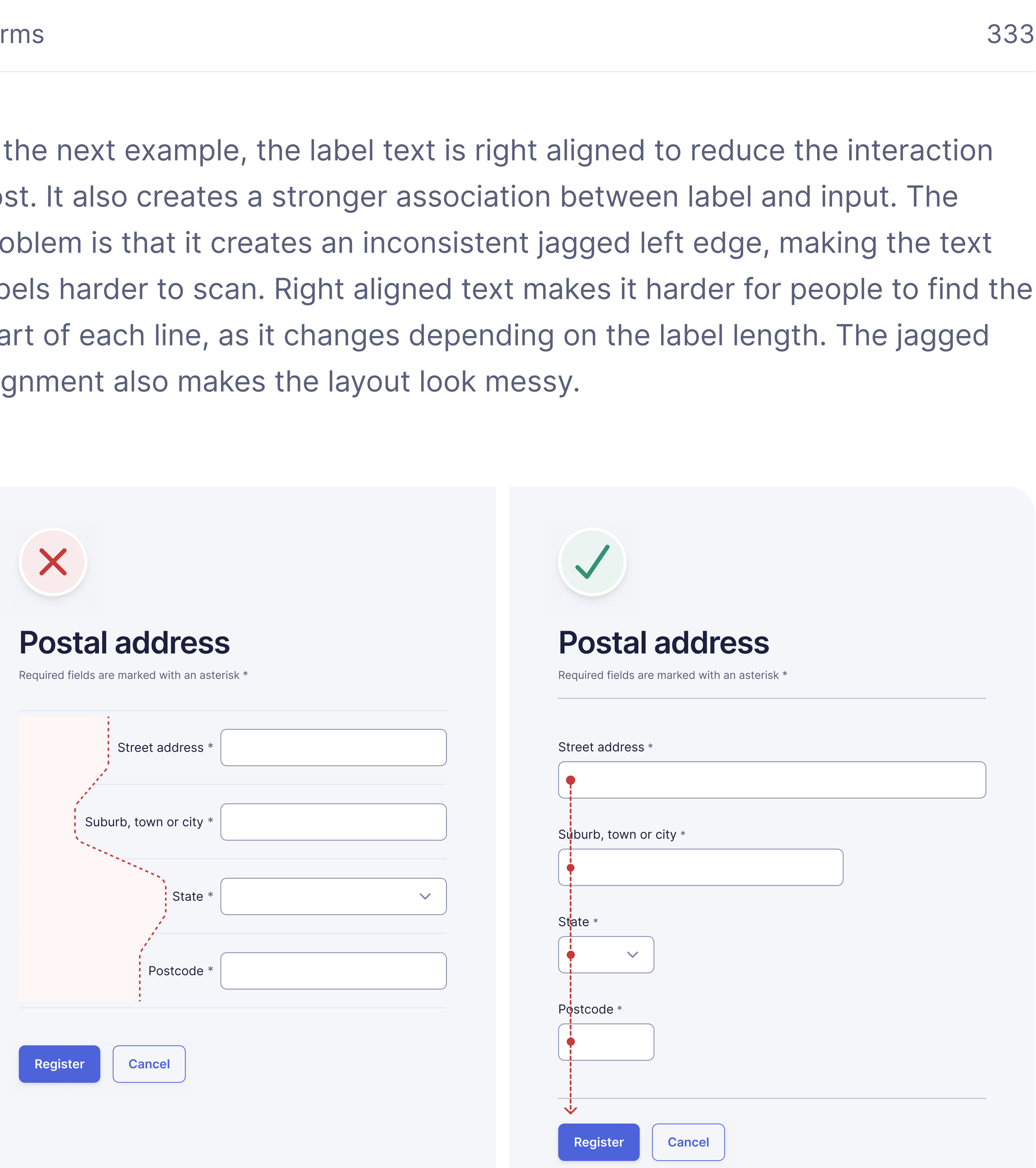
In the following example, the relatively large and inconsistent gap between labels and inputs is highlighted. This gap increases interaction cost. Your eyes need to focus on the label first, then move focus to the input in a zig-zag pattern. Interaction cost is further increased if you forget the label and need to go back and check it.



A large and inconsistent gap between labels and inputs increases interaction cost

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In the next example, the label text is right aligned to reduce the interaction cost. It also creates a stronger association between label and input. The problem is that it creates an inconsistent jagged left edge, making the text labels harder to scan. Right aligned text makes it harder for people to find the start of each line, as it changes depending on the label length. The jagged alignment also makes the layout look messy.



An inconsistent jagged left edge can make text labels harder to scan

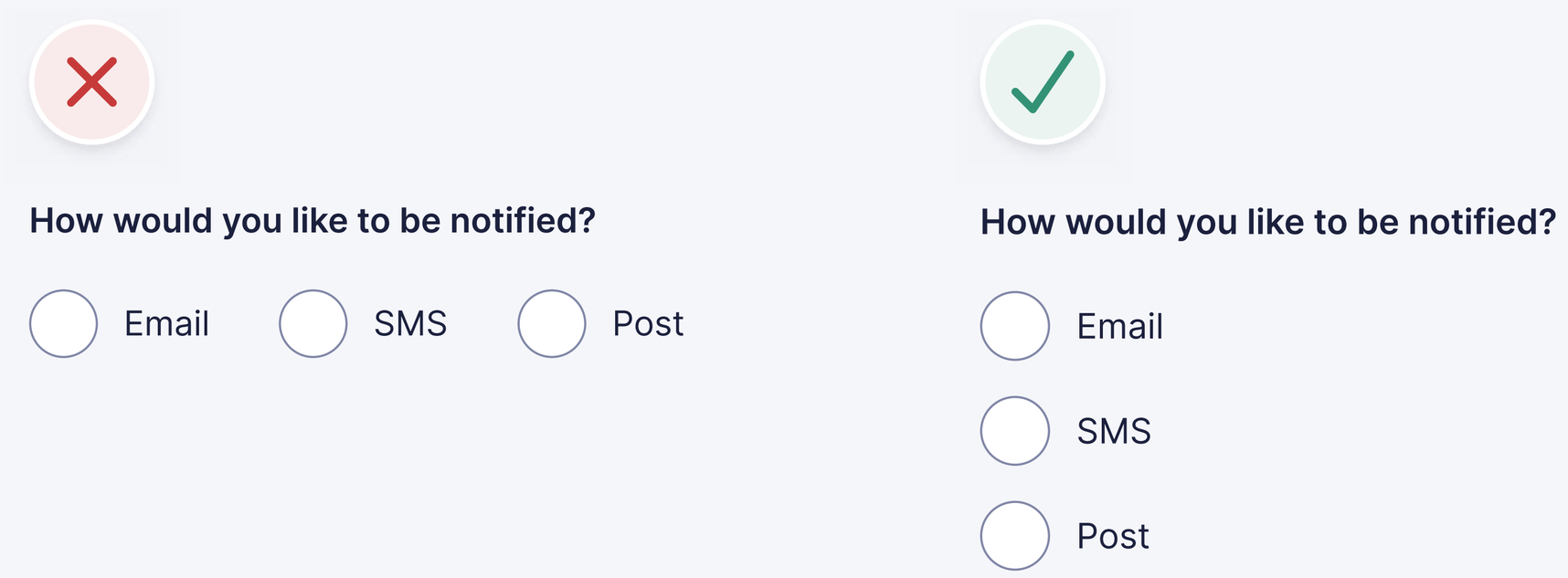
Placing labels to the left of inputs is also problematic if the labels are long. Since space is limited, the label may need to wrap over multiple lines, making it more difficult to read.

To avoid the issues previously mentioned, stack labels closely on top of inputs. It’s neat and tidy, maintains a simple and consistent downward momentum, and decreases interaction cost. This is because your eyes can see both the label and input in a single focus.

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Stack checkboxes and radio buttons

For similar reasons to those previously mentioned, it’s safest to stack checkboxes and radio buttons vertically too. It can also help clearly separate options, so the wrong one isn’t mistakenly selected.



Horizontal versus vertical radio buttons

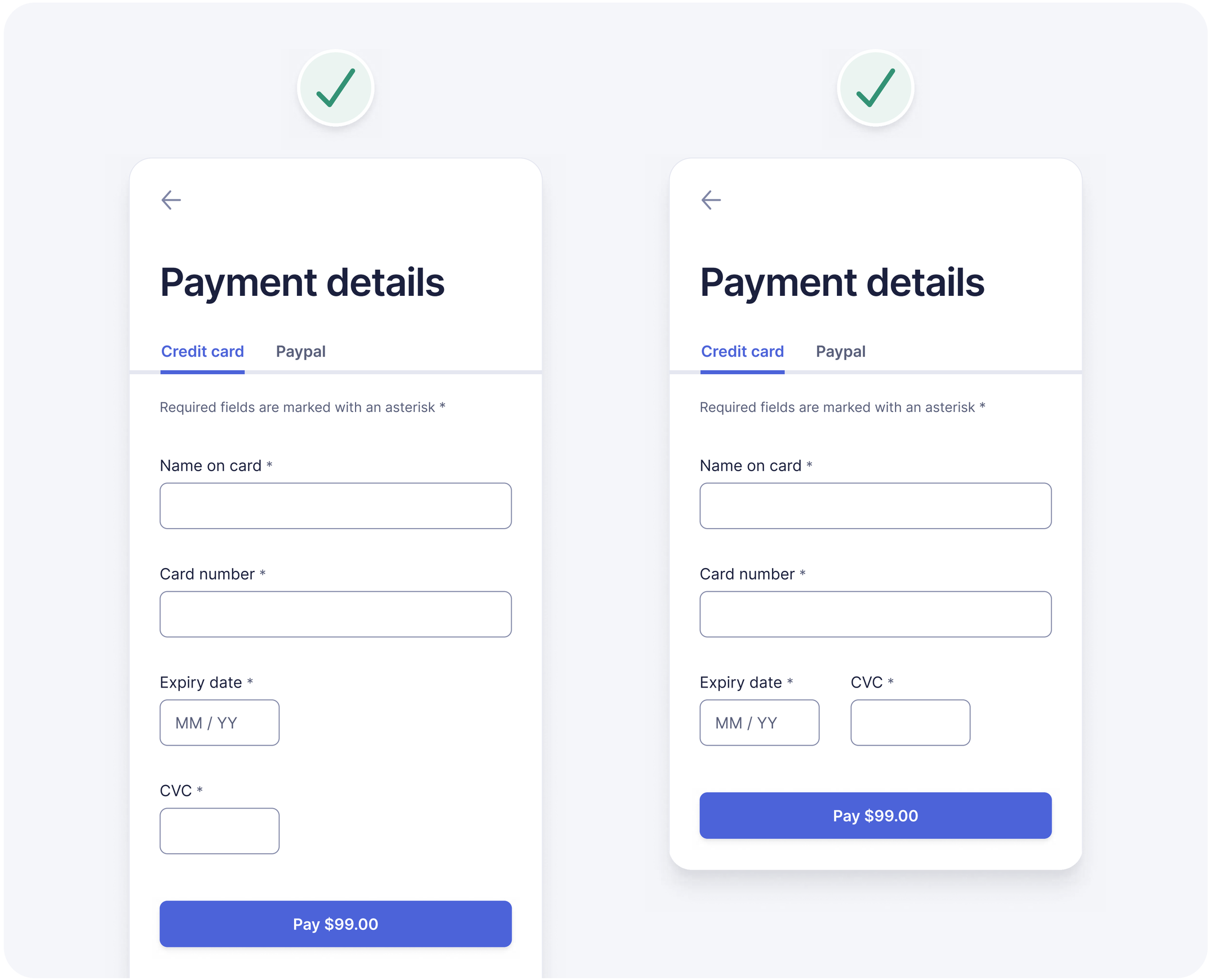
What about the increase in height?

The main downside of stacking form elements in a single column is that it takes up more vertical space. While this can make forms feel longer and may deter some people from filling them out, the advantages of a single column form layout far outweigh the disadvantages.

To reduce the height of forms, short related fields can be placed side by side. For example, it’s common for the credit card expiry date and CVC number to be placed side by side.

Since the fields are relatively small, they’re contained within the bounds of the single column layout. This means they avoid most of the issues that come with a multi-column form layout.

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To reduce form height, short related fields can be placed side by side.

If a form is getting very long and it’s affecting completion rates, consider breaking it up into multiple smaller steps. This can help decrease cognitive load, reduce mistakes, and improve completion rates. You’ll learn more about breaking up forms later in this chapter.

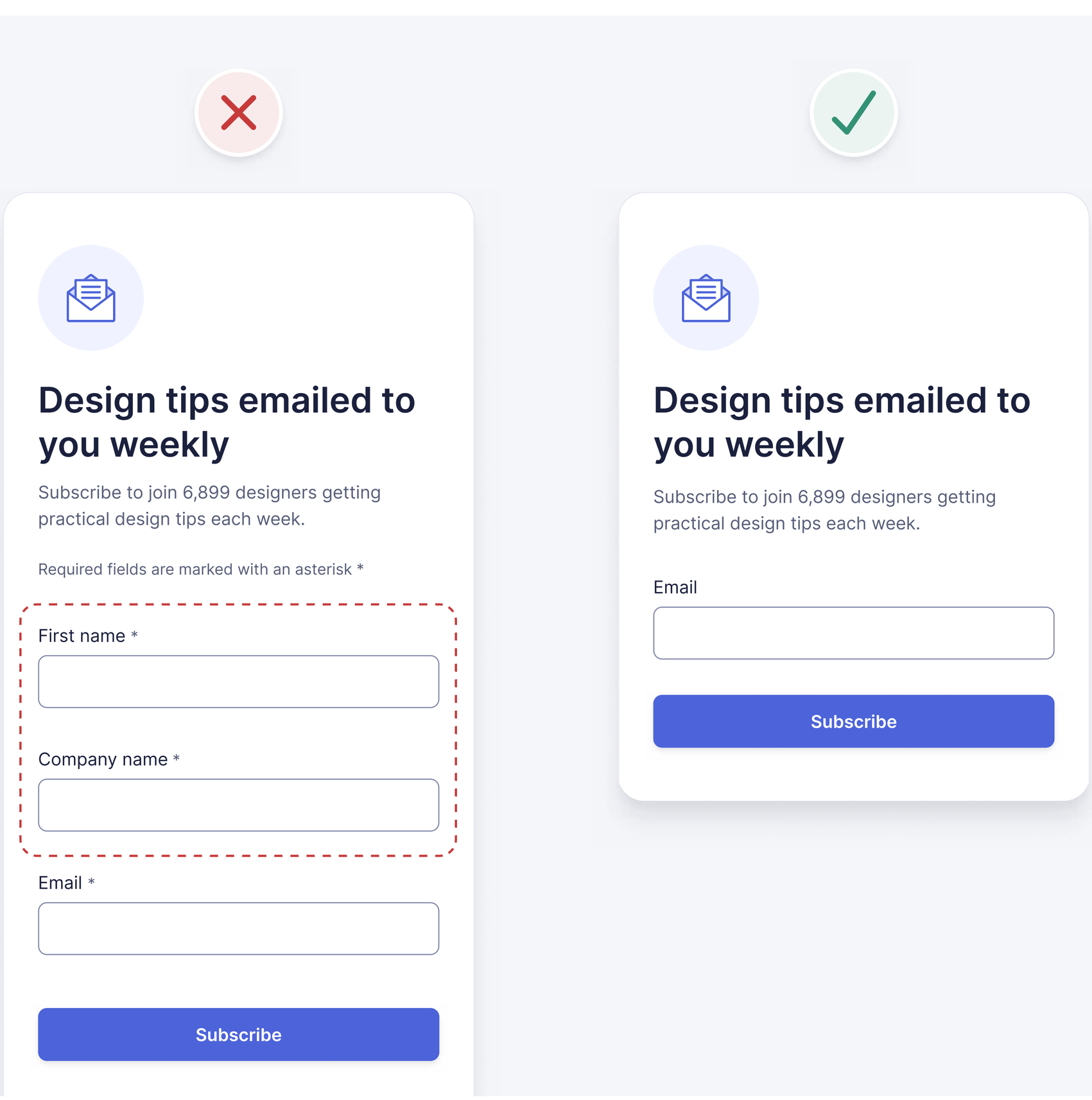
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Minimise the number of form fields

People generally don’t want to give away their personal information. Only ask for information that’s essential to providing your product or service.

More form fields can be problematic and can result in:

- A higher chance that some won’t complete the form.
- More work for those completing the form.
- A higher chance that people will make mistakes.
- More development time building the form.



Remove unnecessary form fields

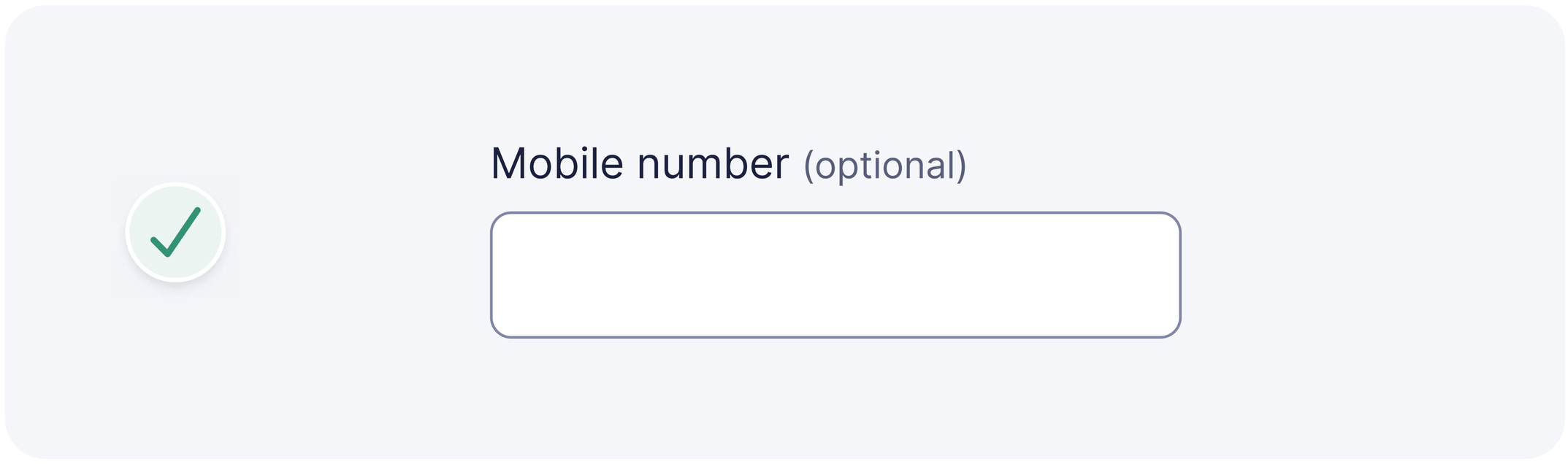
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Mark optional fields

Required form fields must be completed before a form can be submitted successfully. Optional fields don’t need to be completed.

Ideally, you should only ask people for essential information, but sometimes optional fields can’t be avoided. They can also be helpful to gather extra information from people to improve their experience.

Add the word “optional” to optional field labels. It lets people know that they don’t need to provide this information to complete the form.



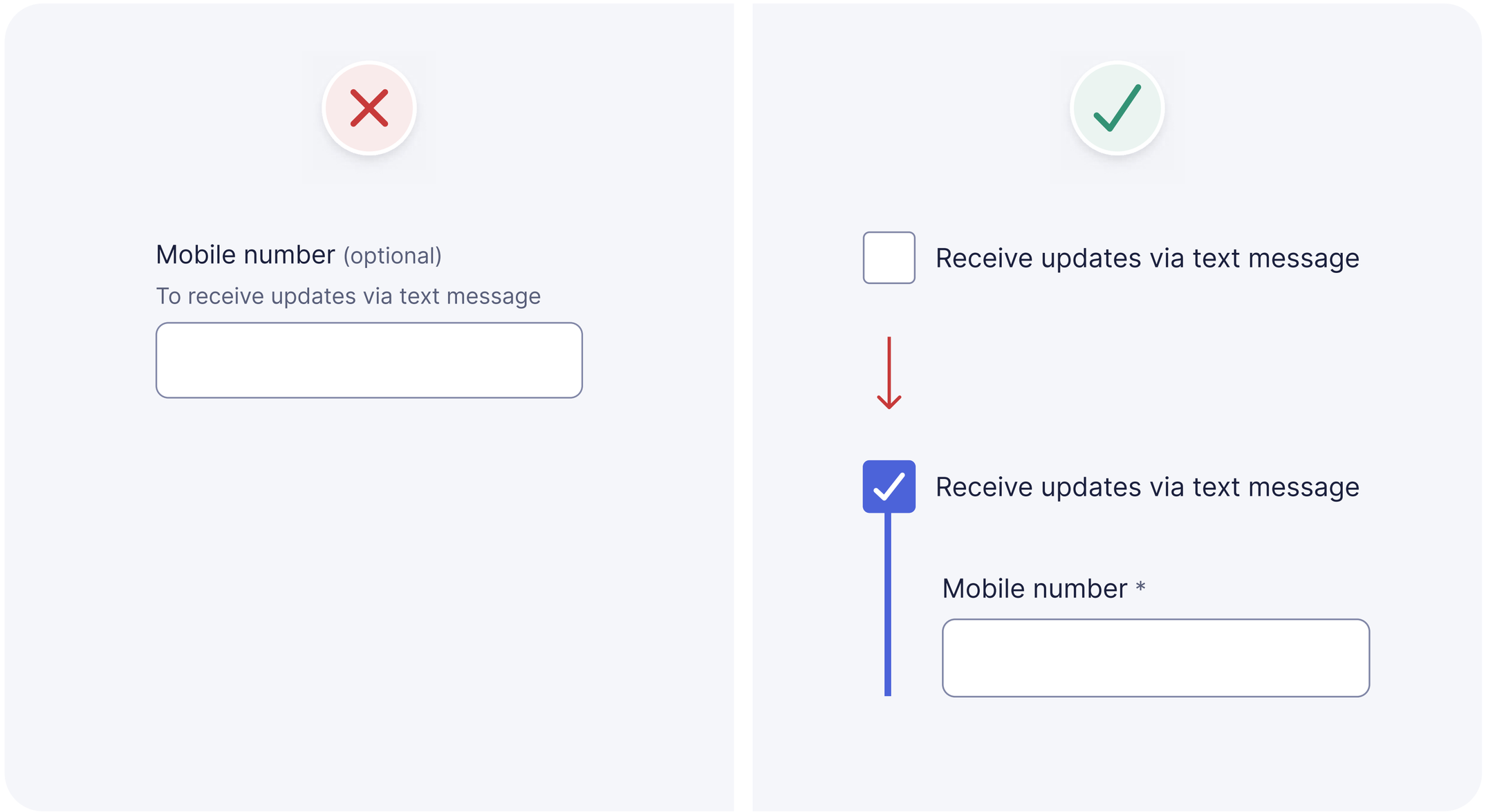
Add the word “optional” to optional field labels

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Try to avoid optional fields by using opt-ins

Including optional fields on forms adds complexity. To simplify forms, try to avoid optional fields altogether. Ask people to opt-in to provide non-essential information.

For example, let’s say that you have a form with an optional mobile phone number input field. It’s for people looking to receive updates via text message. Instead of using an optional field, ask people whether they’d like to receive updates first (using a checkbox). If they would, then ask for their mobile number (using a required input field).



Optional field versus opt-in

Using progressive disclosure in this way can help simplify your form. Those who aren’t interested in receiving updates don’t need to see the extra mobile number field. This makes it faster and easier for people to complete.

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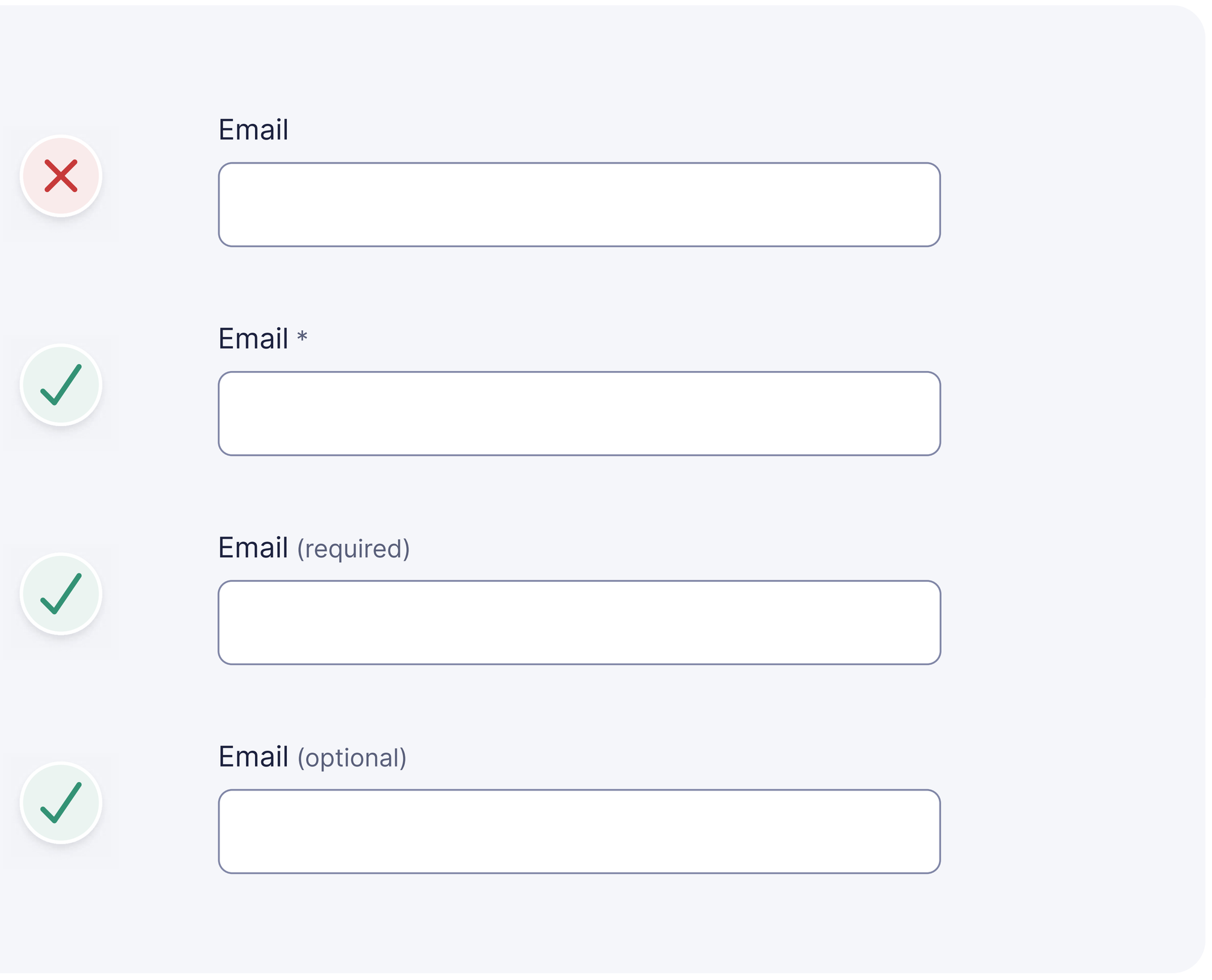
Mark both required and optional fields

It’s safest to mark both required and optional fields, especially for those with cognitive disabilities. It clearly lets people know whether a field needs to be completed or not.

Guidelines for marking required and optional fields:

- Mark required fields with an asterisk * or the word “required”.
- Mark optional fields with the word “optional”.

We’ll look at the rationale behind these guidelines next.



Mark both required and optional fields

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The problem with leaving required fields unmarked

Marking required fields with an asterisk * or the word “required” is often avoided by designers to reduce clutter. Instead, only optional fields are marked and the following instructions are included at the top of the form: “All fields are required unless marked optional”.



Subscribe for updates

Enter your details below to receive service alerts and product updates

All fields are required unless marked optional

First name

Email

Mobile number (optional)

To receive updates via text message

Subscribe for updates

Instructions are often skipped which could leave people guessing whether form fields are required or not

The problem with this approach is that instructions are often skipped, as people scan an interface. This can leave them guessing whether form fields are required or not.

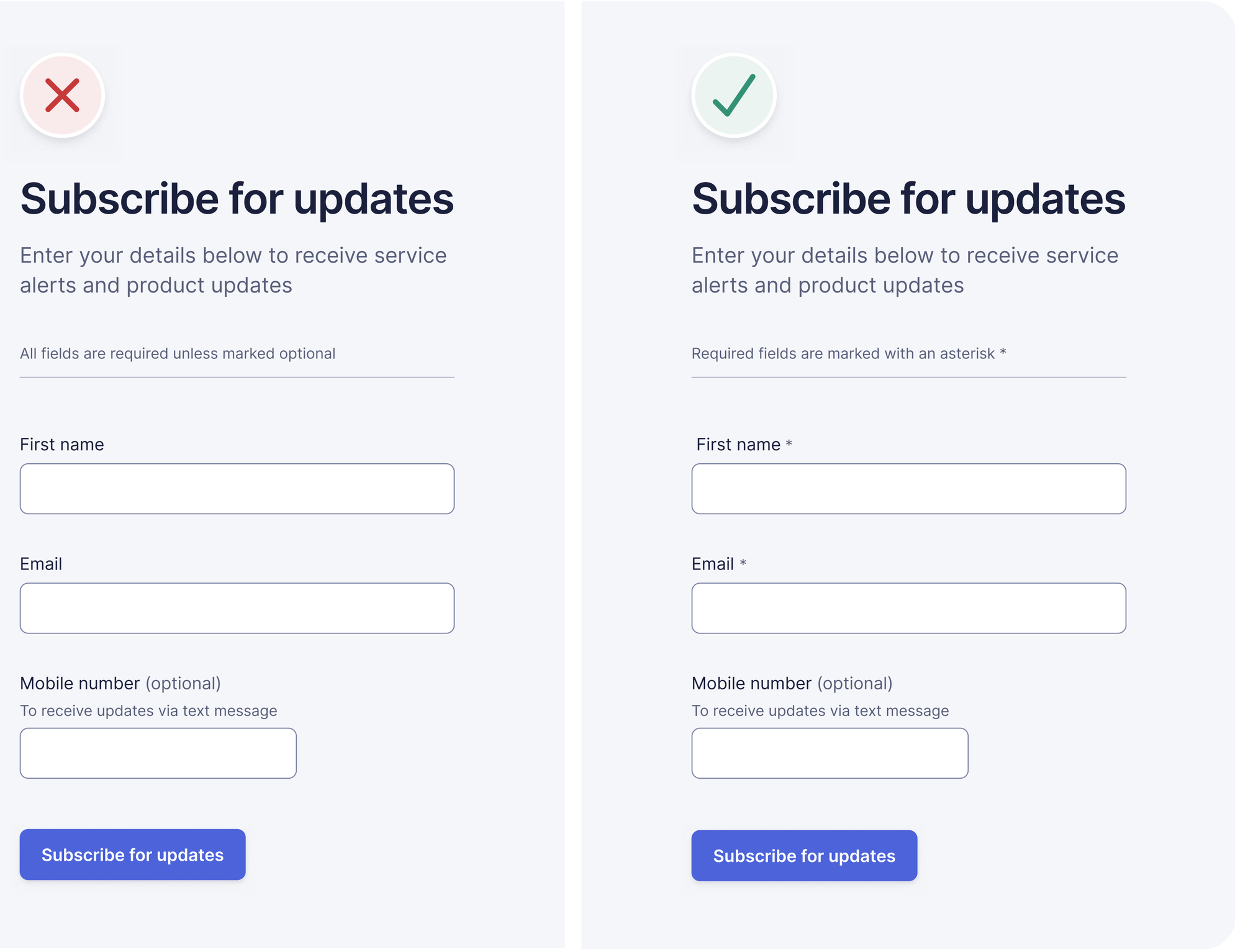
Marking both required and optional fields is an accessibility requirement for screen reader users, so it makes sense to do the same for sighted users.

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Mark required fields with an asterisk *

Marking required fields with an asterisk is a concise and familiar way to clearly indicate the fields people need to complete. Avoid colouring the asterisks red, as red commonly indicates an error.

You still need to include instructions at the top of the form, but it won’t matter as much if people miss them, as many people are familiar with the meaning of the asterisk.



Marking required fields with an asterisk is concise and familiar

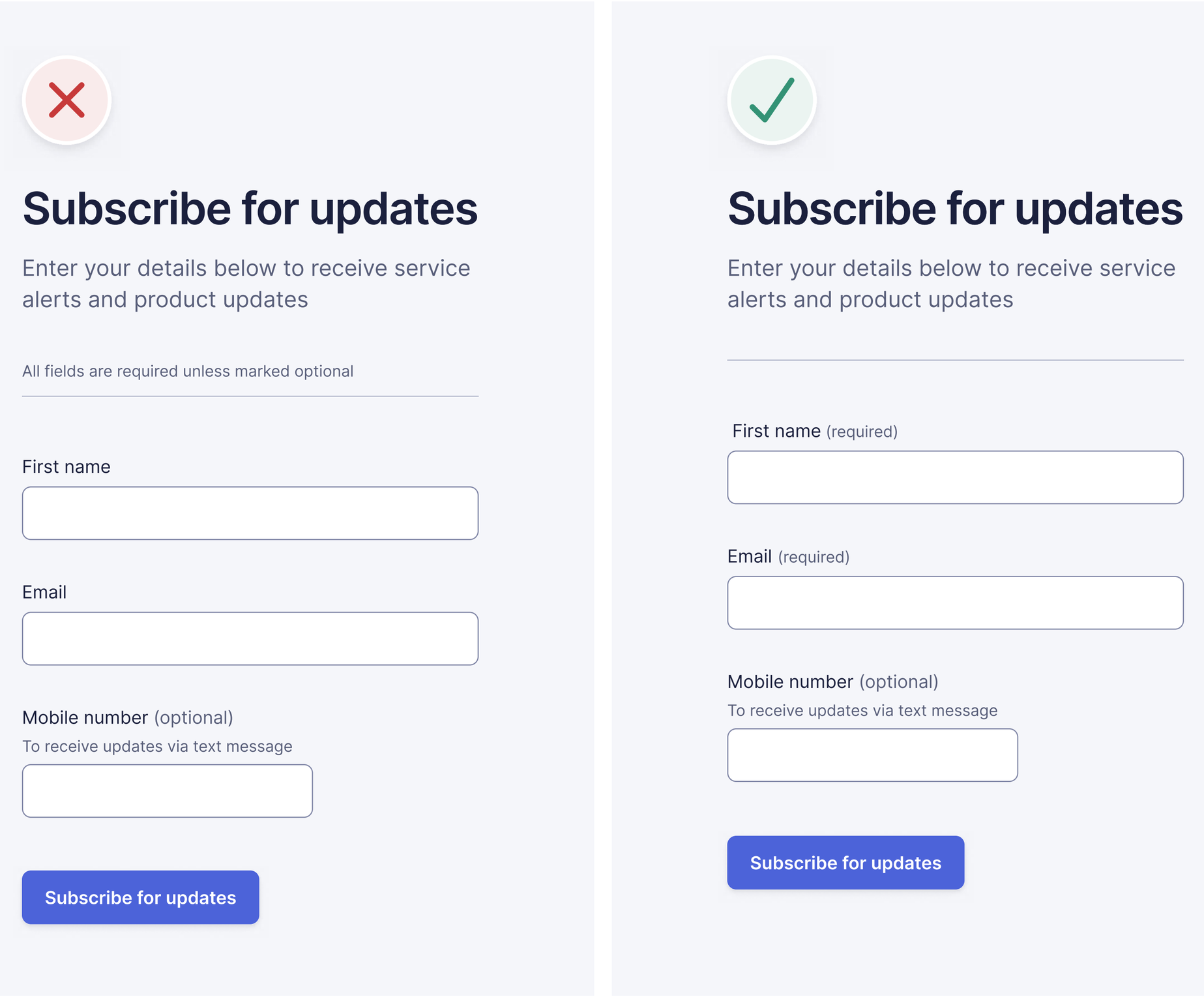
Marking required fields with an asterisk also makes it easy for people to quickly scan a form to get a better idea of how many required fields they need to complete.

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Mark required fields with the word “required”

There’s still a small risk that some people might not understand that an asterisk indicates a required field. To be crystal clear, you can include the word “required” on required fields.

This means there’s no need for any additional instructions at the top of the form. Sure, it adds clutter, but it’s clearer and it avoids the usability risks mentioned earlier.



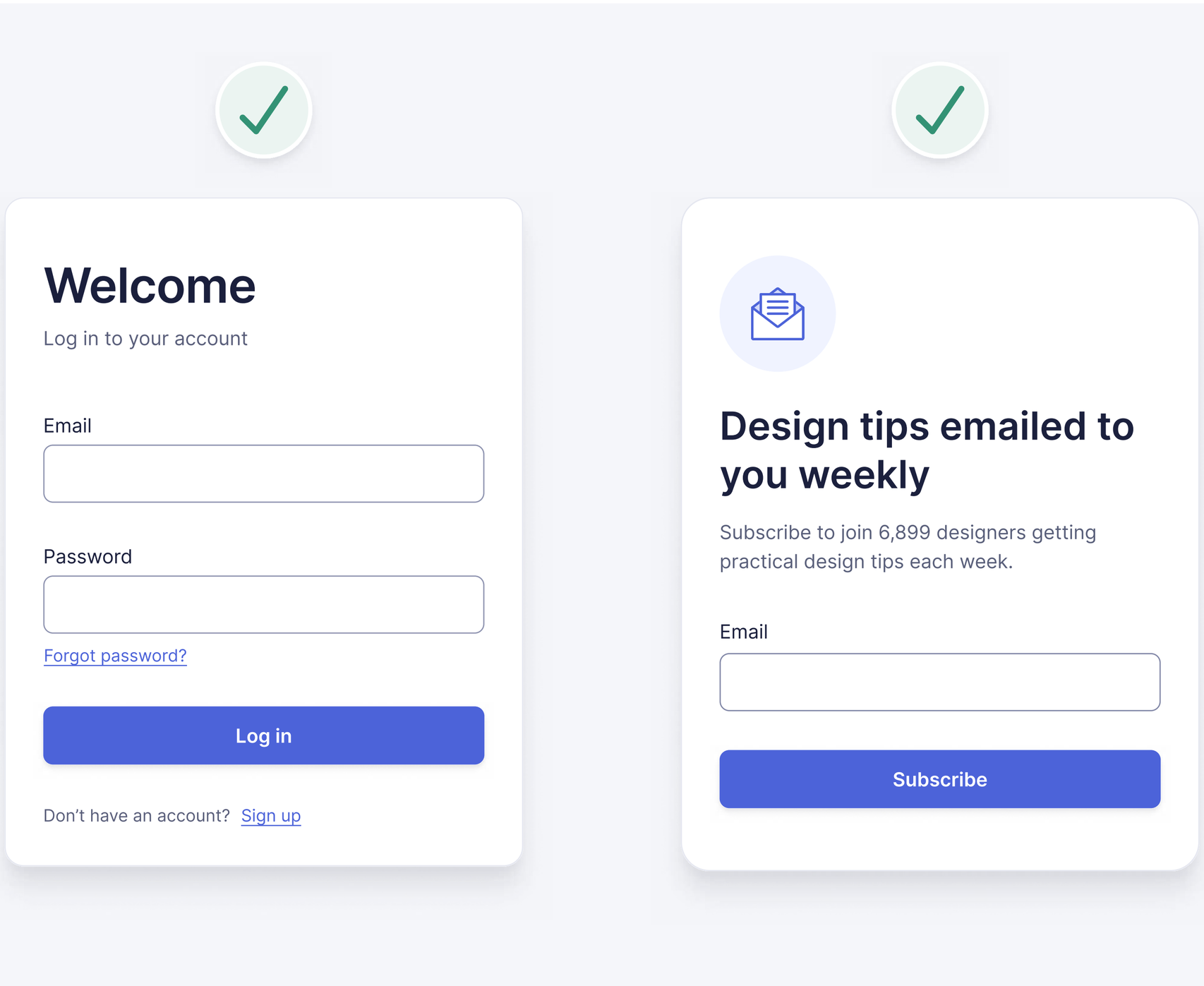
Marking required fields with the word “required” is safest

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Situations where you don’t need to mark required fields

To reduce clutter, you could consider leaving required fields unmarked in the following situations:

- If you don’t have any optional fields in your product.
- For short familiar forms like single field newsletter subscriptions or logins. It’s commonly understood that these fields are required to subscribe or log in.
- If your forms ask a single question per screen and you clearly explain why you’re asking each question.
- If usability testing validates that you don’t need to mark required fields.



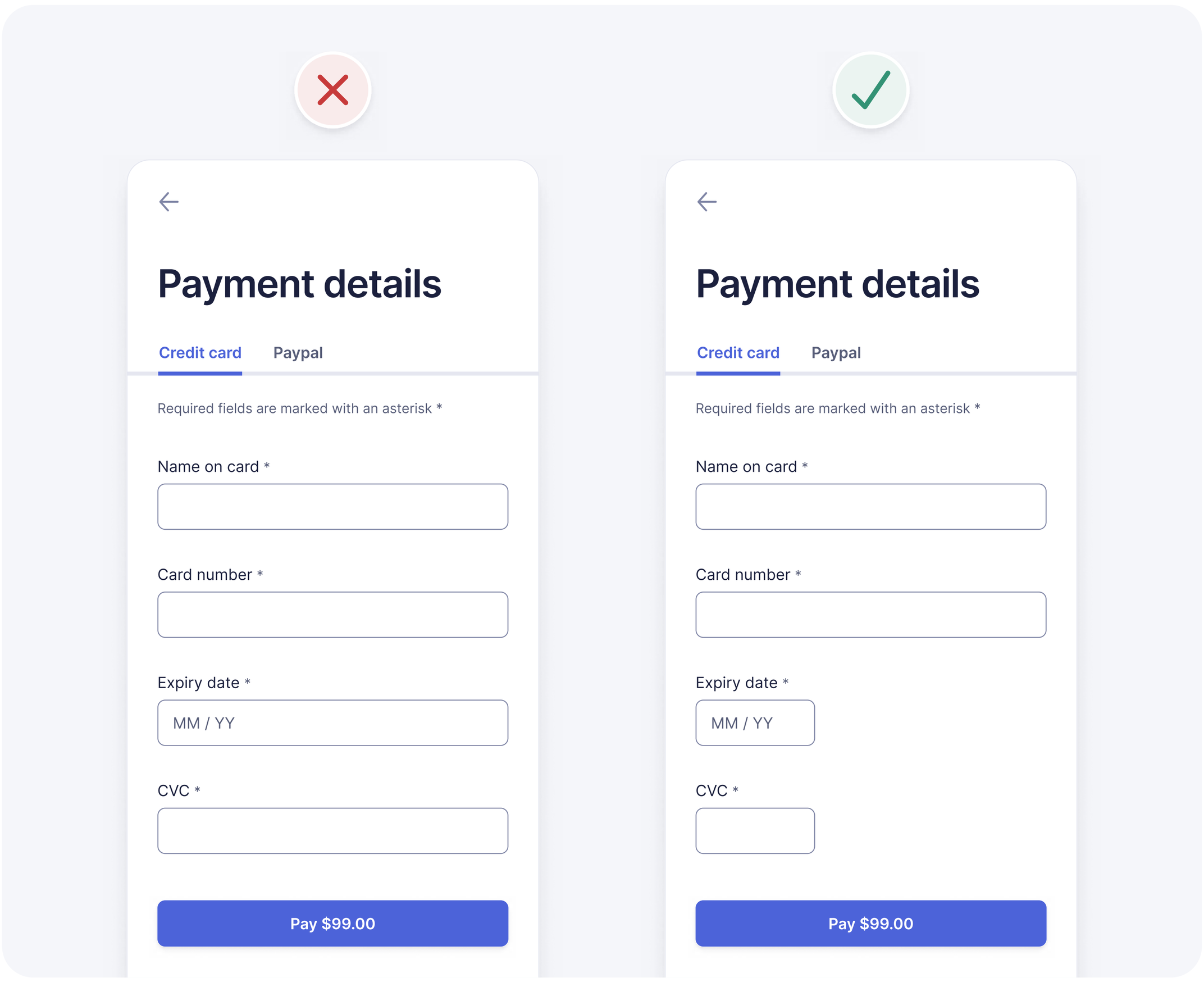
Example of a log in and newsletter subscription form

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Match field width to the intended input

The width of a form field sets people’s expectations for the amount of information expected in the field. Using a wide field to collect a small piece of information can increase cognitive load and cause confusion.

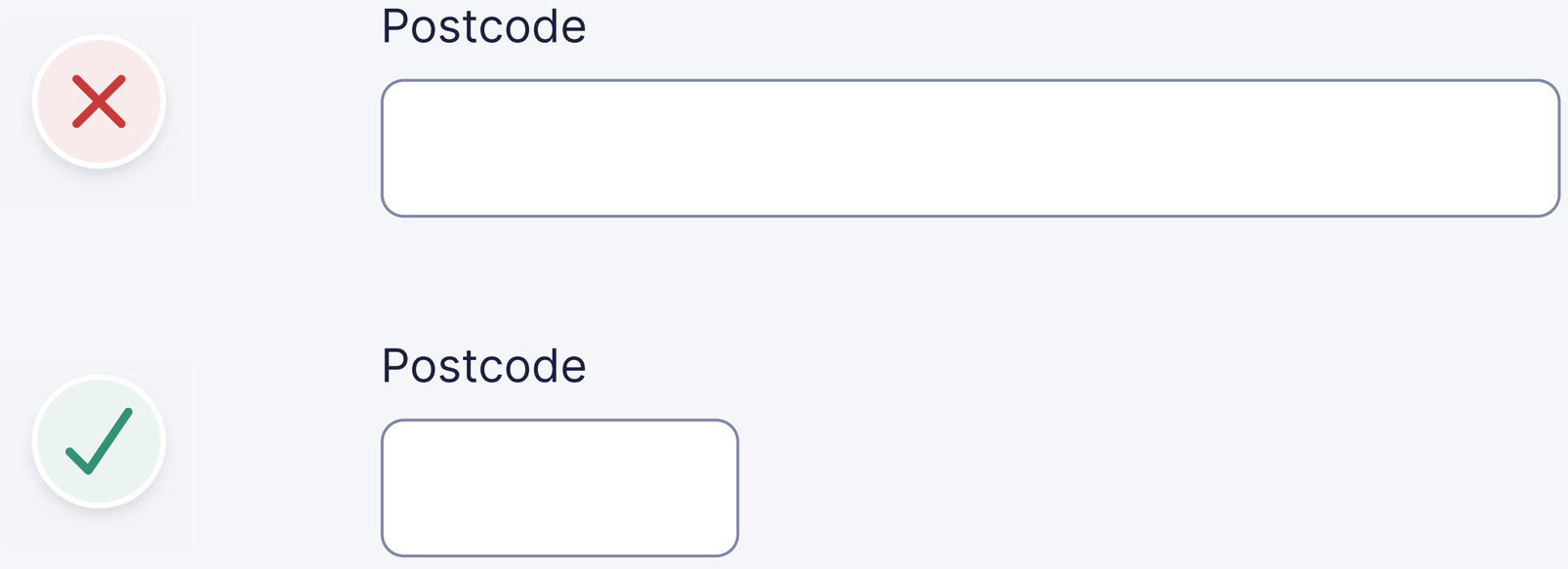
Even though it looks neat and tidy, don’t set all fields to the same width. The field width should be just wide enough to display all characters in the input.



Full-width fields versus fields with a width that matches their intended input

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For example, a postcode in Australia is 4 numbers, so you should set your field width to accommodate 4 numbers only.



A postcode input field should have a width of 4 numbers

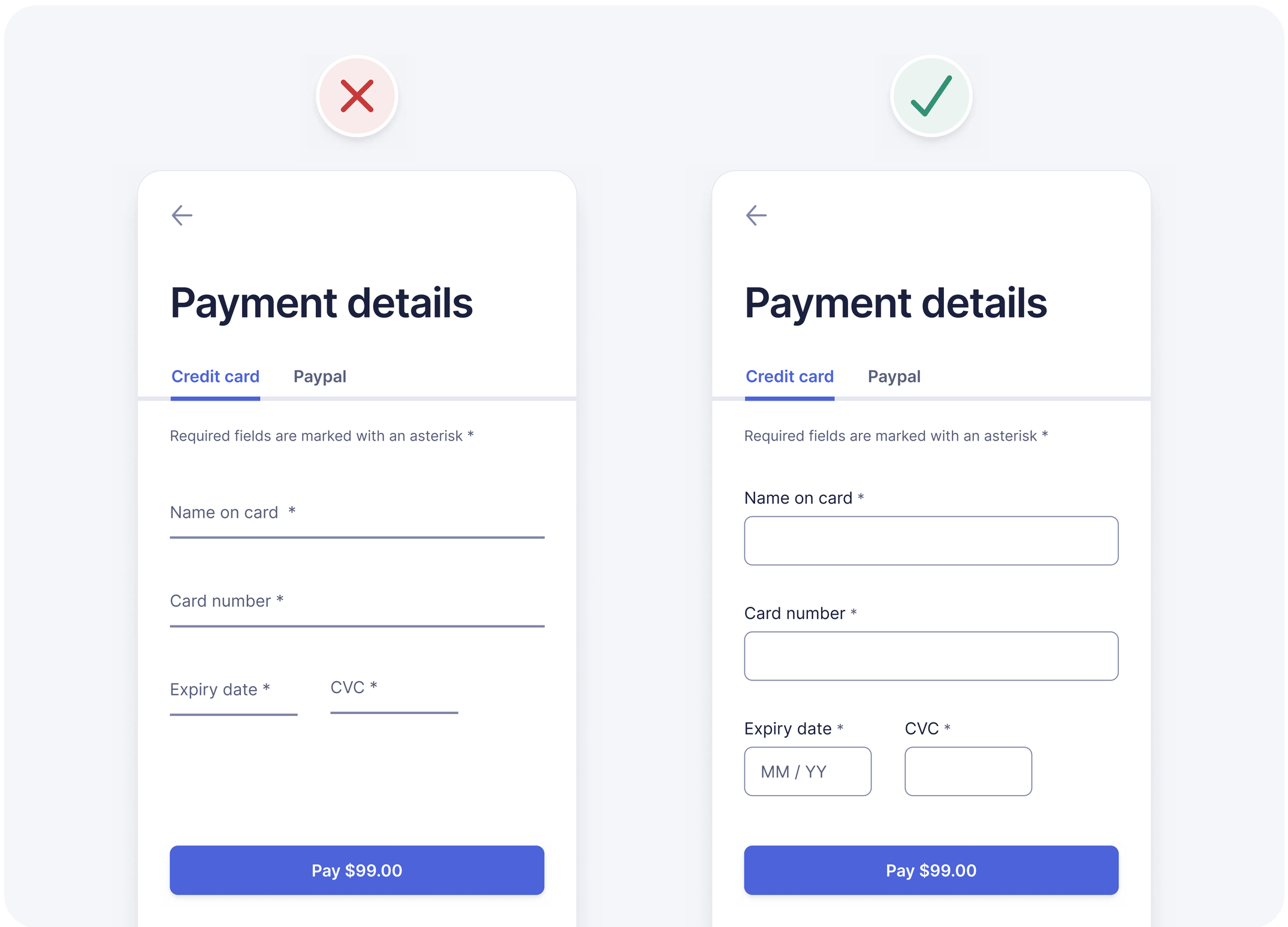
If the expected input length varies, set the field width to accommodate the most common case or the longest case if possible.

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Stick with conventional form field styles

According to Jakob's Law, it's safest to use conventional design patterns that people are familiar with. Aligning to people's existing mental models (understanding of how something works) can help avoid usability issues and decrease cognitive load. So, stick with conventional form field styles.

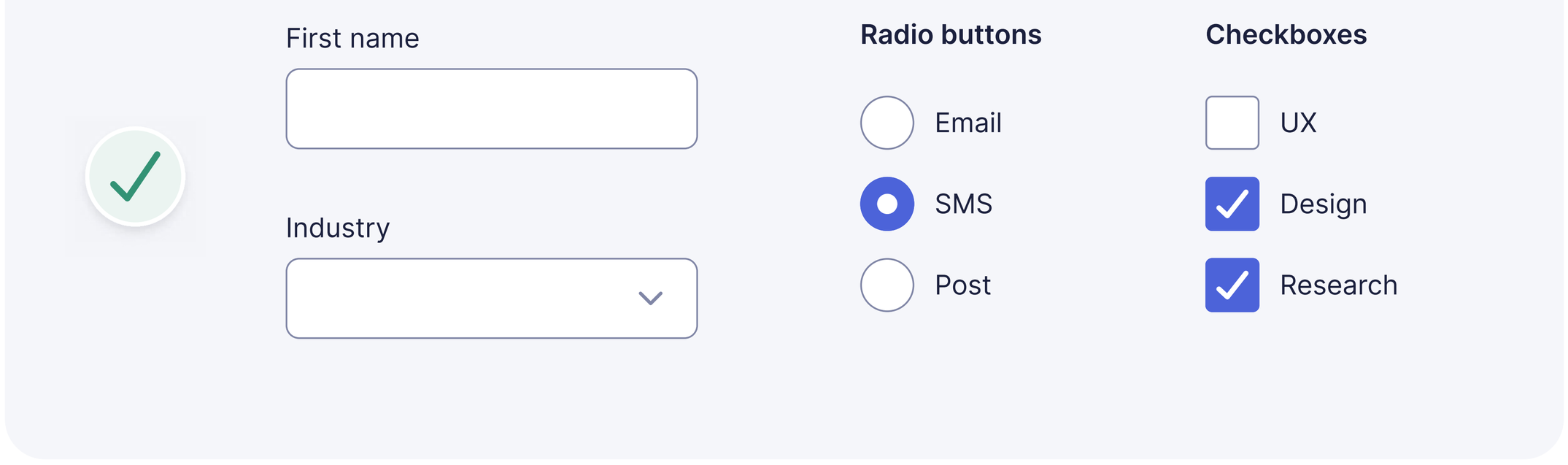
In the following example, unconventional form field styles make it unclear where people should put the answer to each question. Because the labels are inside the fields where the answers go, the fields already look filled. This makes it harder to distinguish between filled and empty fields. Using conventional field styles makes it much clearer.



Unconventional form field styles versus conventional ones

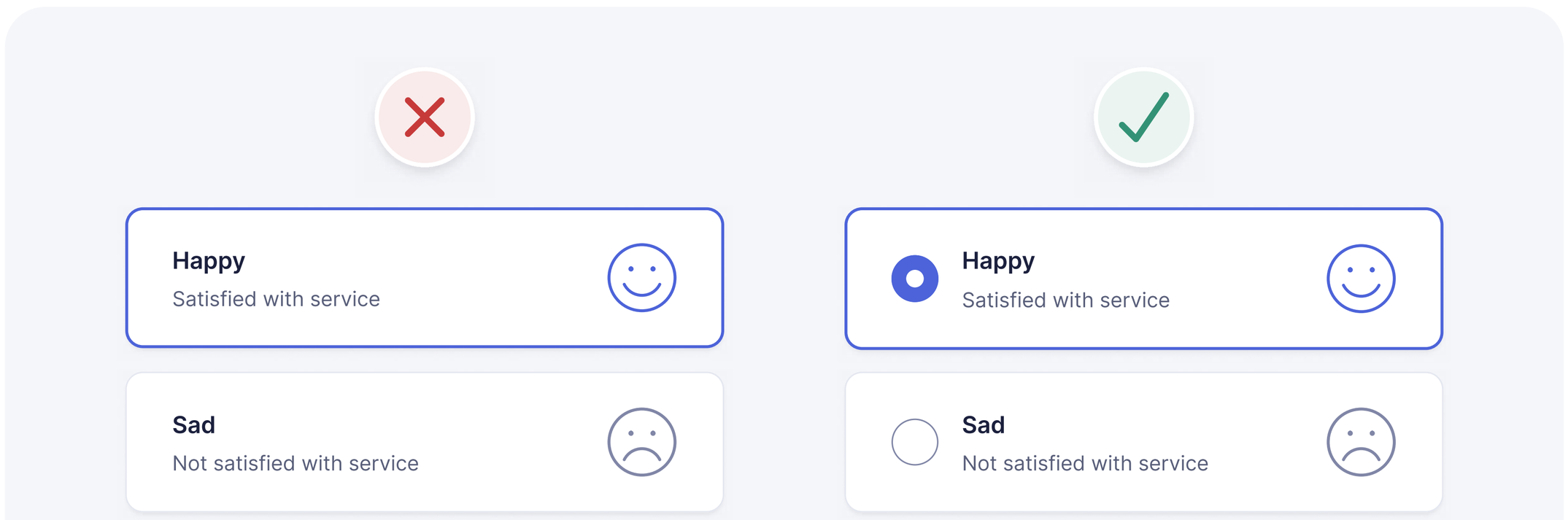
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If you’re keen to modify form fields, try to ensure that they still contain the iconic elements of conventional form fields. This helps people understand your new form field style, as they can tie it to the conventional one they’re used to.



Conventional form field styles

The radio buttons, in the following example, were modified to increase their target area. Since they don’t contain any conventional form field styles, their behaviour is unclear. Can multiple items be selected? Do they link somewhere? It’s important to keep the iconic circle on the left of labels to tie them to conventional radio buttons. This lets people know that one option can be selected. Without the iconic radio button circle, the behaviour of the element is unclear.



The iconic circle is kept on the left of labels to tie them to conventional radio buttons

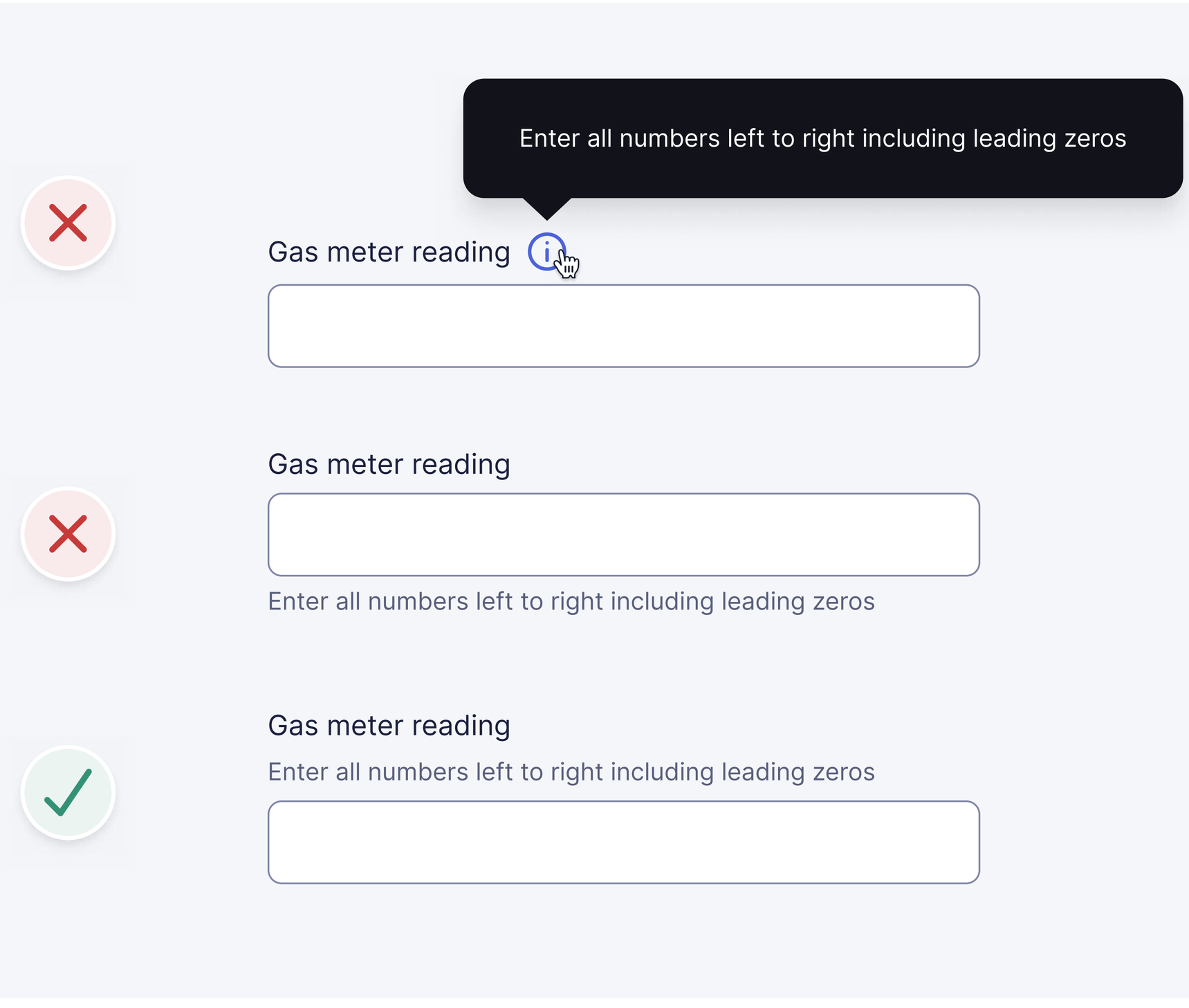
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Display hints above form fields

Sometimes a short label isn’t enough to clearly describe the information required in a form field. A “hint” or "helper text” is additional information that helps people complete a form field.

To help declutter an interface, hints are often hidden in tooltips (floating messages displayed on hover or press of an action). There’s a risk that hidden hint text could be missed. If additional information is critical to help people complete a field, ensure it’s visible.

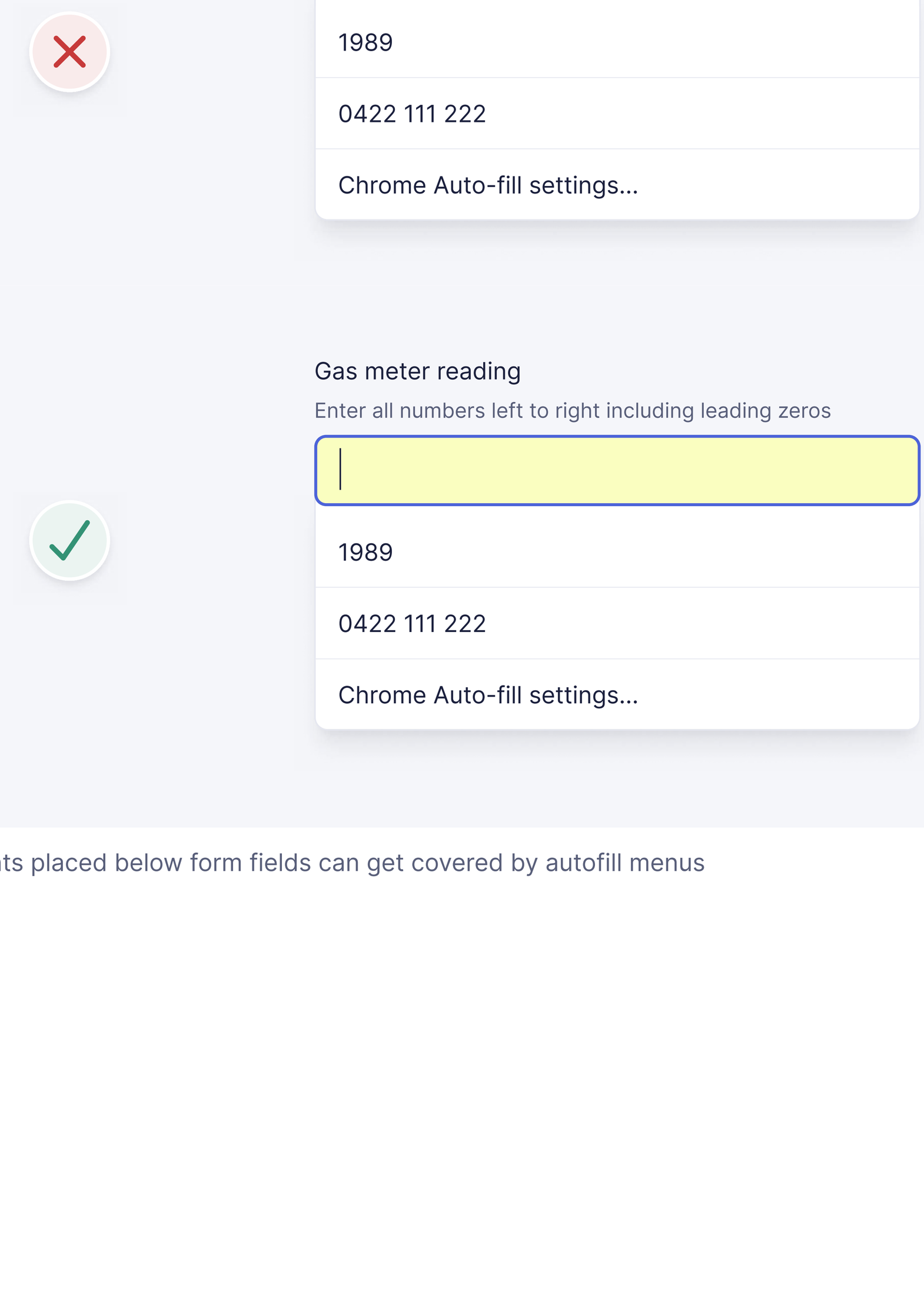
Hints are often placed below form fields, but it’s more logical to place them above fields. This helps people avoid errors and maintain downward momentum when completing forms. If a password needs to be at least 6 characters long, tell people before they fill out the password field, not after.



Display hints above form fields to help avoid errors and speed up form completion

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Another problem with placing hints below form fields is that the space below form fields can be covered by autofill menus and on-screen keyboards. This results in the hint being hidden.

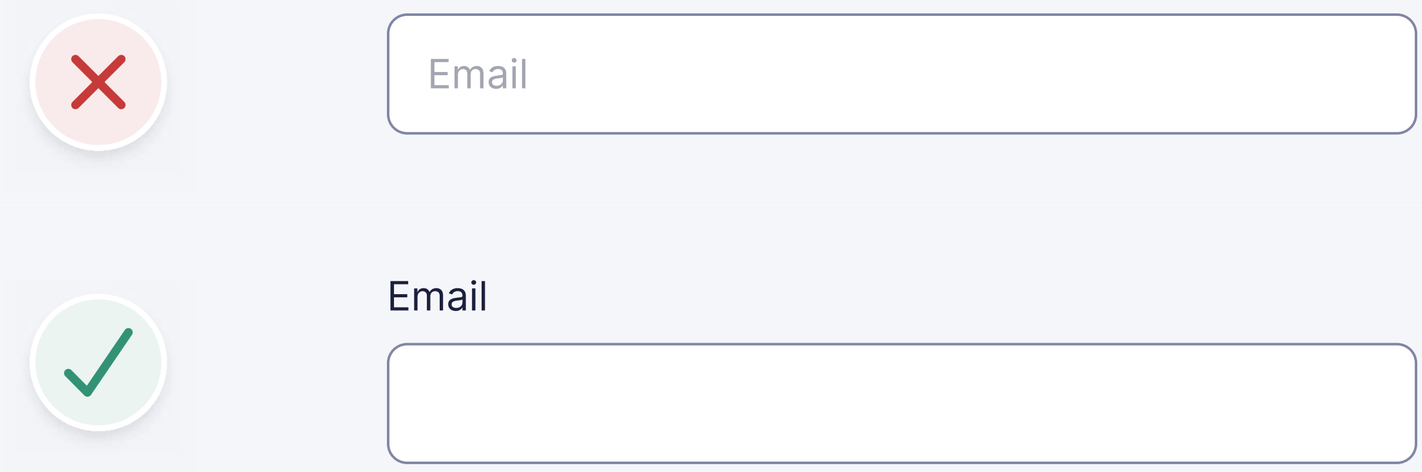


Hints placed below form fields can get covered by autofill menus

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Don’t use placeholder text instead of a label

Placeholder text is a short hint displayed inside an input field before a person enters a value. To save space, placeholder text is often used instead of a label, as seen in the following example.



Placeholder text being used as a label versus an input with a separate label on top

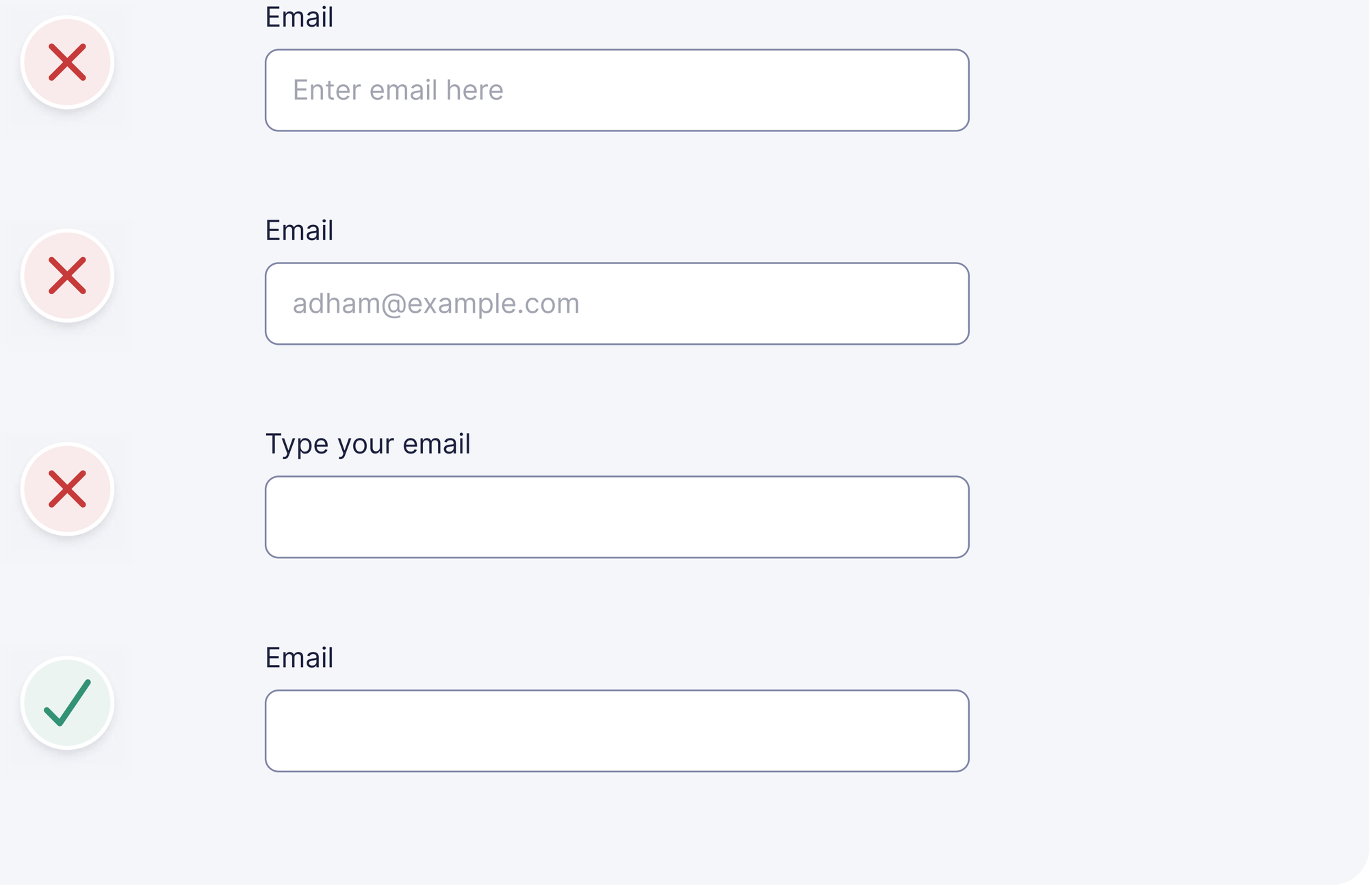
This is problematic for the following reasons:

- Placeholder text disappears once a person starts filling in an input field, causing some to forget what the field was for.
- Some might miss or skip fields with placeholder text, as it can look like the field has already been pre-filled.
- Placeholder text colour contrast is almost always inaccessible, as it’s very light by design. This means many will struggle to read the label.

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Form label tips

- Always display a short descriptive label above form fields.
- Add a hint under the label if more information is needed.
- Avoid placeholder text in most cases, as it’s unnecessary and can make inputs look like they’ve already been pre-filled.
- Avoid unnecessary instructional verbs (doing words) in your labels and hints. For example, “Enter email here” or “Type your email” is unnecessary, as it’s already implied by the input field.



Do’s and don’ts with form field labels

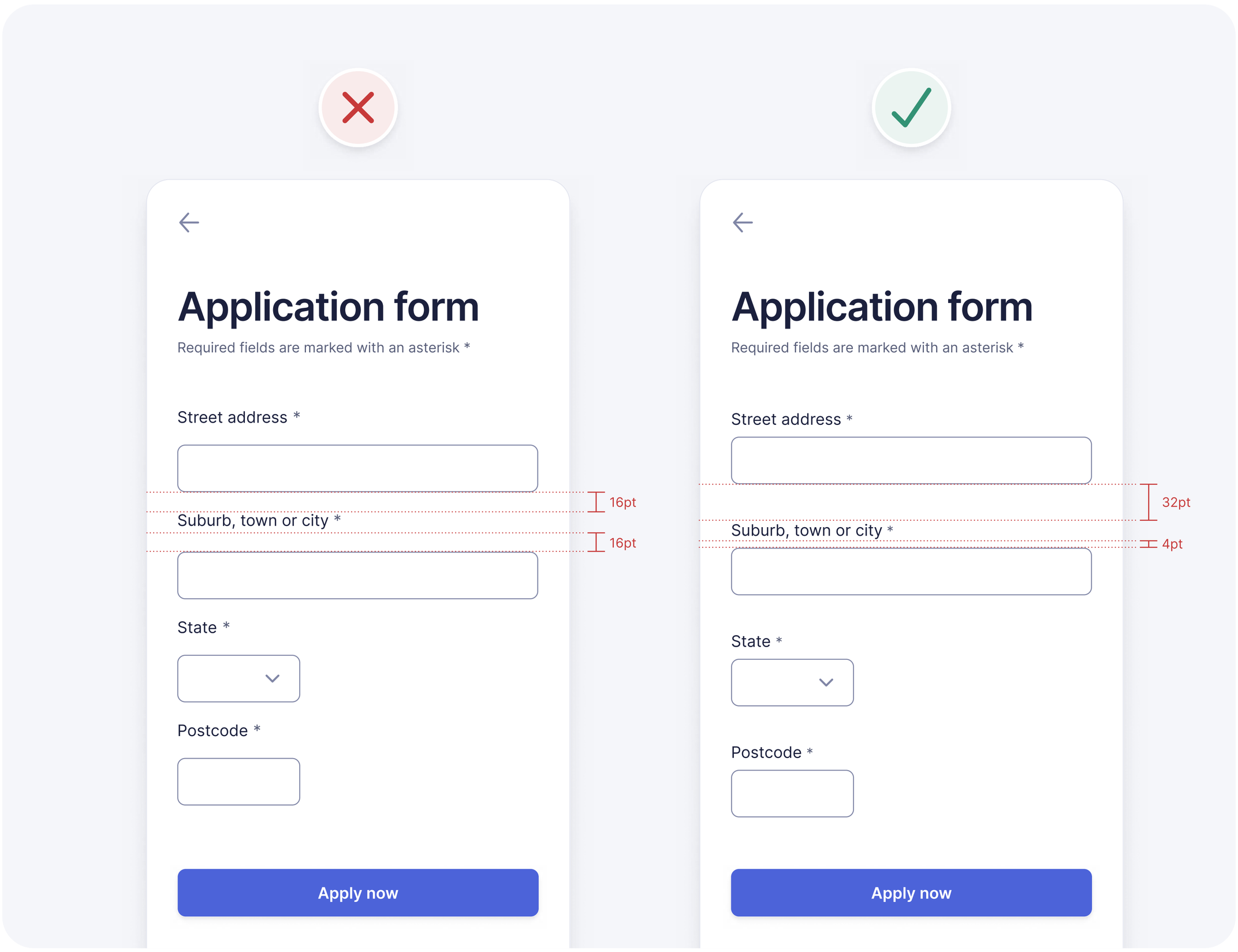
There are some exceptions to this guideline. Using placeholder text for single form fields like search boxes is fine, as long as you increase the contrast ratio of the placeholder text to at least 4.5:1 and ensure the field has an accessible label for screen readers.

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Ensure form field labels are close to their fields

It’s very common for form field labels to be spaced relatively far away from their input fields. This makes it unclear which labels relate to which fields.

When spacing interface elements, make sure that related elements are spaced closer together to clearly indicate that they’re related.



Ensure form field labels are close to their fields to clearly indicate that they’re related

Another benefit of spacing labels close to their input fields is that your eyes don’t need to focus on the label and input field separately. Your eyes only need to focus once on each field, which decreases the interaction cost.

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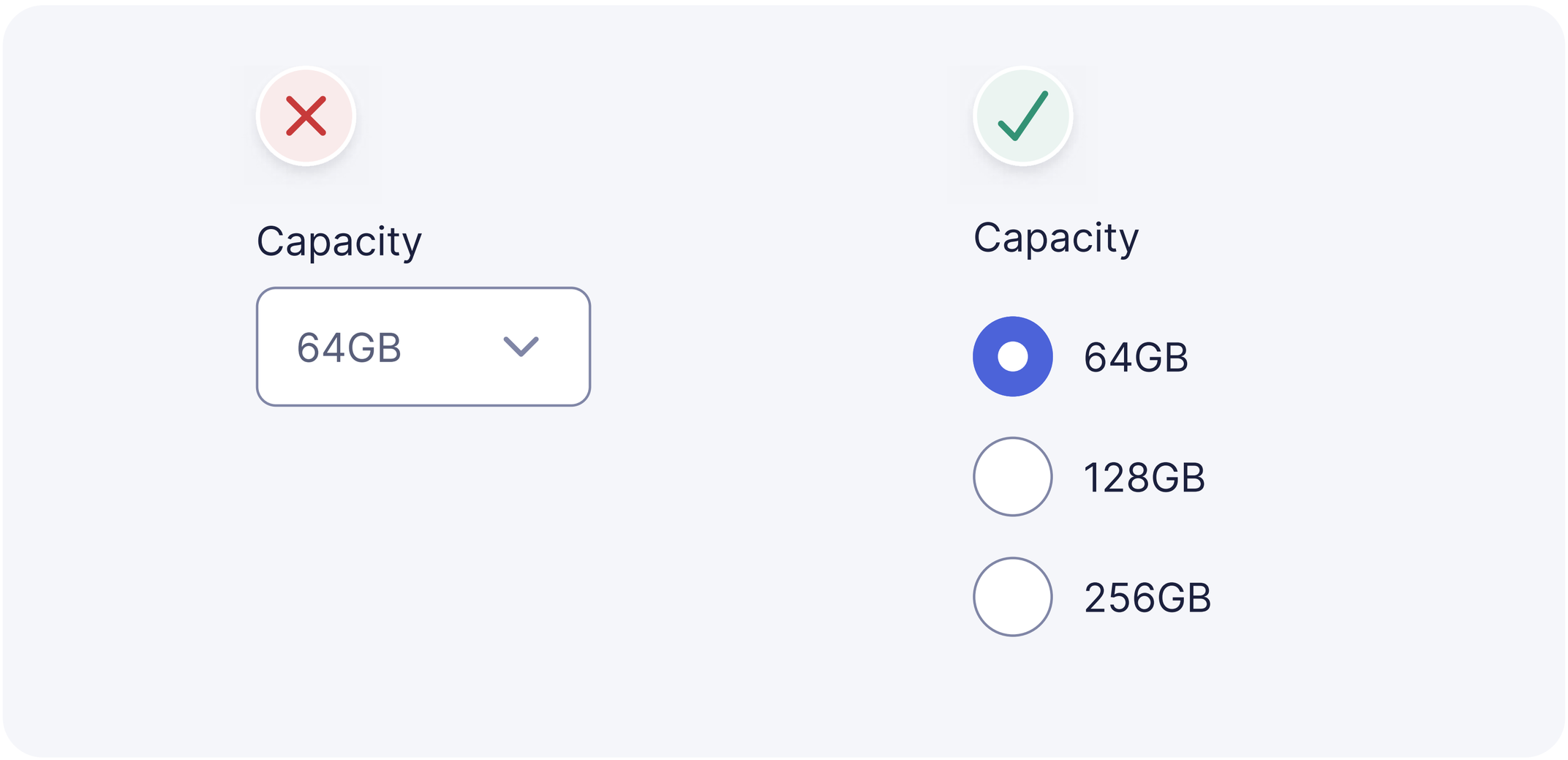
Try to use radio buttons instead of dropdowns

If there are around 10 options or fewer, consider displaying them as radio buttons instead of hiding them in a dropdown.

Dropdowns are popular as they’re compact and tidy, but they can also be difficult and inefficient to use for the following reasons:

- Dropdowns have a high interaction cost, as they require multiple precise interactions. They can be especially difficult to use for people with motor impairments.
- Dropdowns can be mistaken as being filled and accidentally skipped.
- Options are hidden initially, making them hard to scan.

Radio buttons on the other hand, only require one quick interaction and are always visible and easy to compare. That being said, if saving space is a priority, it’s fine to use a dropdown.



Try to use radio buttons instead of dropdowns for around 10 options or less

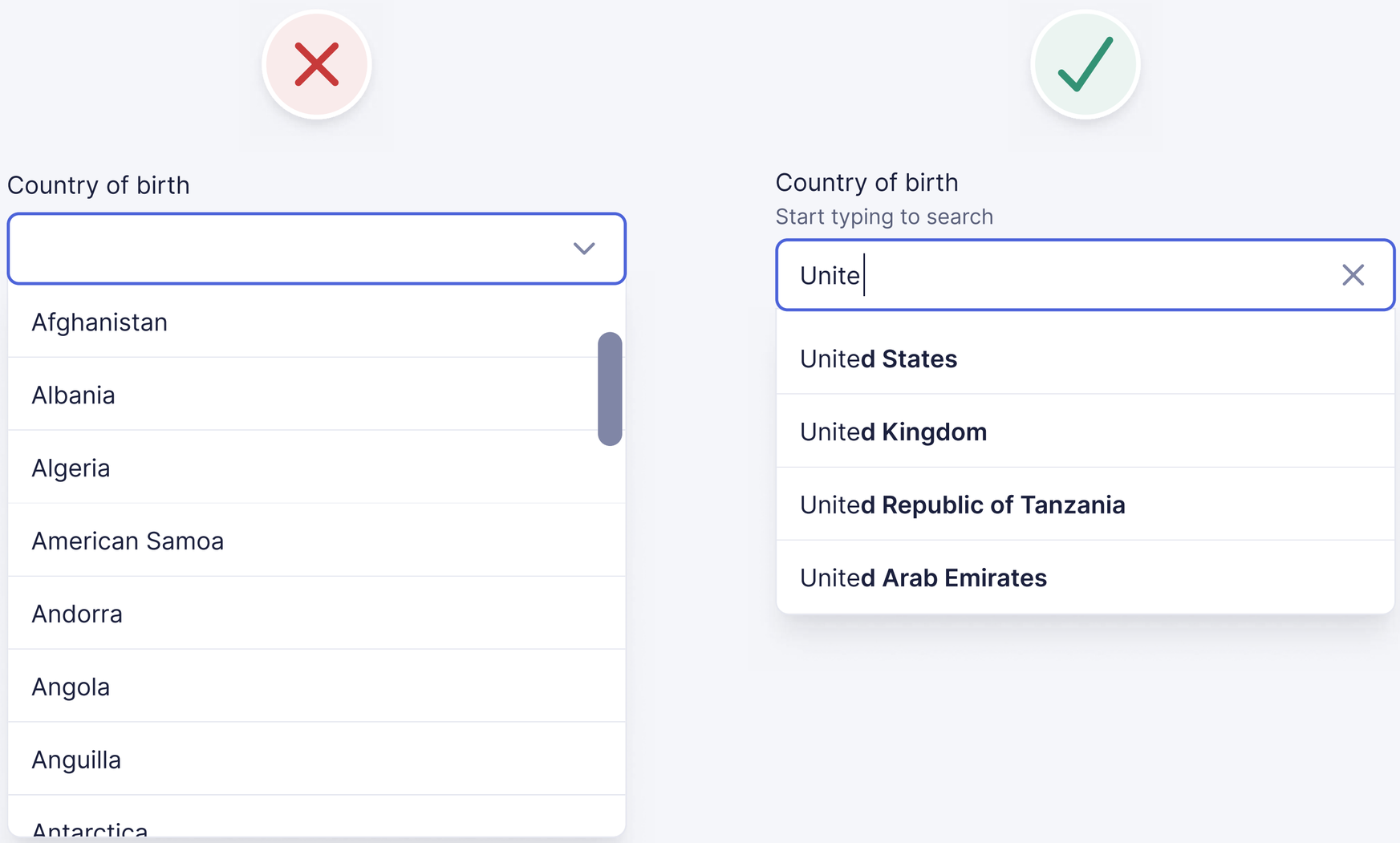
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Use an autocomplete instead of a long dropdown

Rather than force people to scroll through a long list of options in a dropdown, use an autocomplete search field (also known as predictive search) to help them find what they’re looking for faster.

An autocomplete search field displays suggestions as someone types into the field, just like the Google search bar.

For example, it’s much faster and easier to search for your country of birth, than to select it from a long dropdown list. Highlight the differences between suggestions in bold to help people differentiate them faster.



Long dropdown versus an autocomplete to select country of birth

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Quick design tips for autocomplete fields:

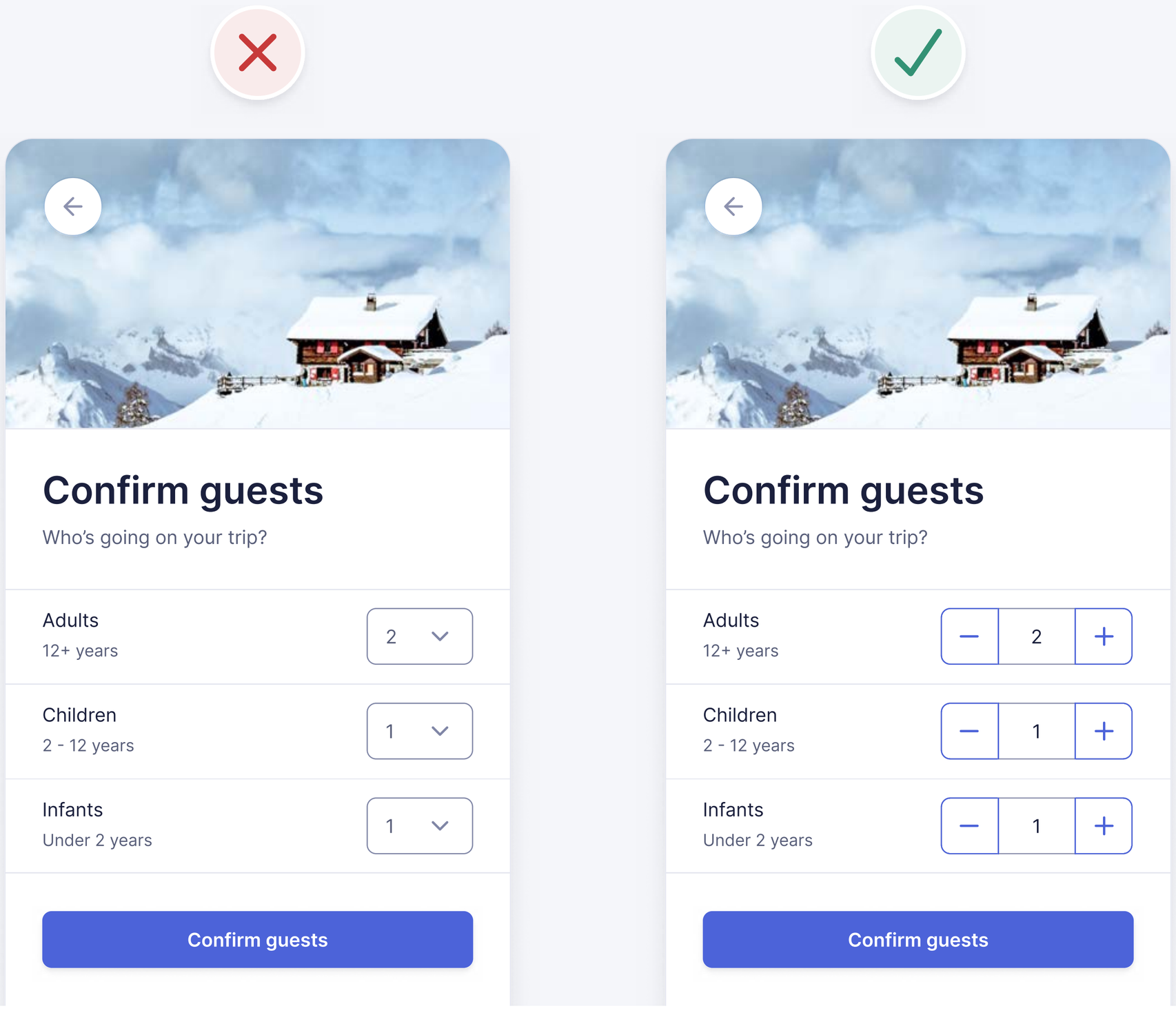
- An autocomplete search field is suitable for fields where people know what they’re looking for. For example, country of birth, a particular product, or a particular article.
- For less familiar fields, where people need to browse a long list of options to find a suitable selection, consider breaking the dropdown list into multiple separate fields. For example, occupation dropdowns are generally very long. Break them into 2 separate dropdowns, “industry” and “occupation”, to make them easier and faster to complete.
- Try to keep the number of suggestions to around 10 or fewer. This avoids choice paralysis (where people are overwhelmed and give up). The goal is to make decisions easier and faster by providing fewer options.
- Highlight the differences between suggestions in bold to help people differentiate them faster.

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Use steppers for numeric fields instead of dropdowns

A stepper component makes it easier and faster for people to make small numeric changes. It allows people to increase or decrease a number with a single button press, or by typing the number in the field.

In the following example, using steppers to select the number of guests decreases the interaction cost significantly. Let's say that you needed to select 2 adults, 1 child, and 1 infant as guests for your trip. The interaction cost using dropdowns is 6 clicks plus 3 scrolls. Whereas, the interaction cost using steppers is only 4 clicks.

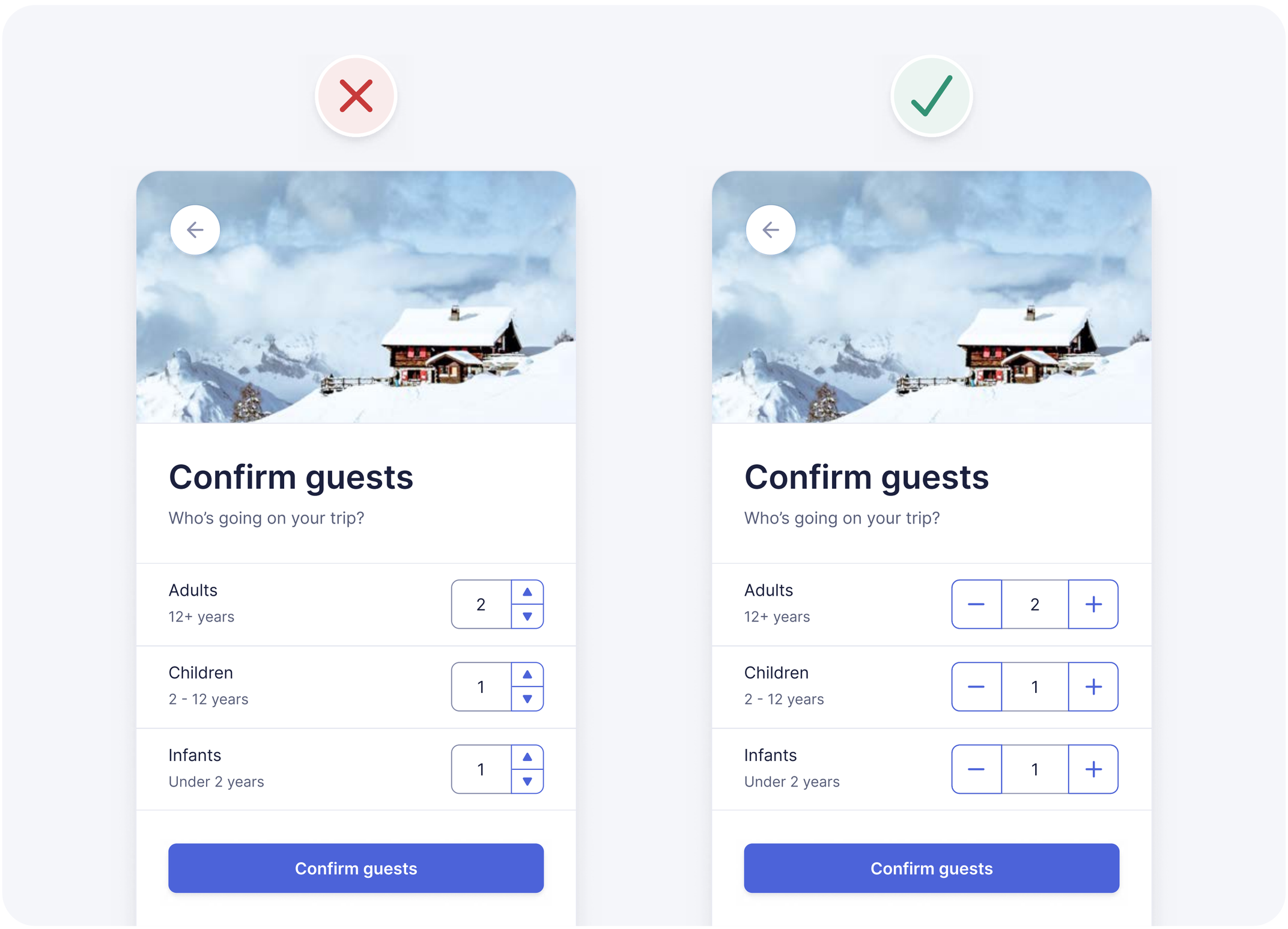


Dropdowns versus steppers to select number of guests

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Quick tips for designing steppers:

- Make sure stepper buttons have a sufficient target area. Use a minimum of 48pt by 48pt for buttons. The small buttons in the following example can be difficult for some to use.
- Place buttons horizontally rather than vertically. This allows more space between buttons, decreasing the risk that people might hit the wrong button accidentally.
- Use “+/-” buttons rather than “up/down” arrows or chevrons. This helps clearly differentiate stepper buttons from dropdowns or accordions.
- Steppers aren’t suitable for making large numeric changes, as the interaction cost would be high.



Ensure stepper buttons have a sufficient target area and space between them

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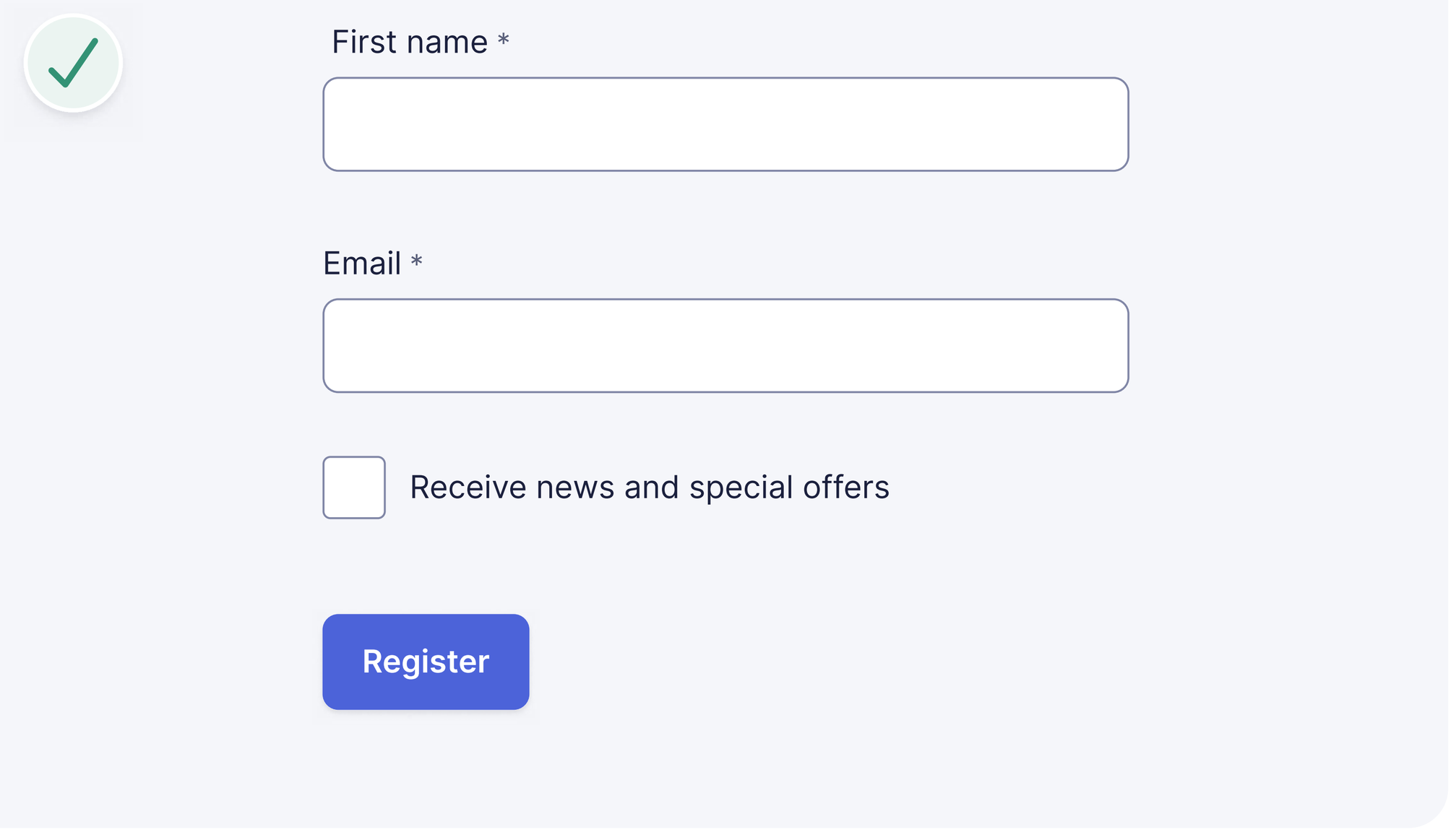
Use a checkbox or toggle switch for 2 options

For simple on or off options where the default option is off, consider using a checkbox or toggle switch. They have a lower interaction cost than dropdowns and are more compact than using 2 radio buttons.

Checkbox usage

Use a single checkbox when a user needs to press a submit button before the option will take effect. Make sure the checkbox label describes what will happen when the checkbox is checked.

In the following example, people can use a checkbox to opt in to receive news and special offers and then submit the form.



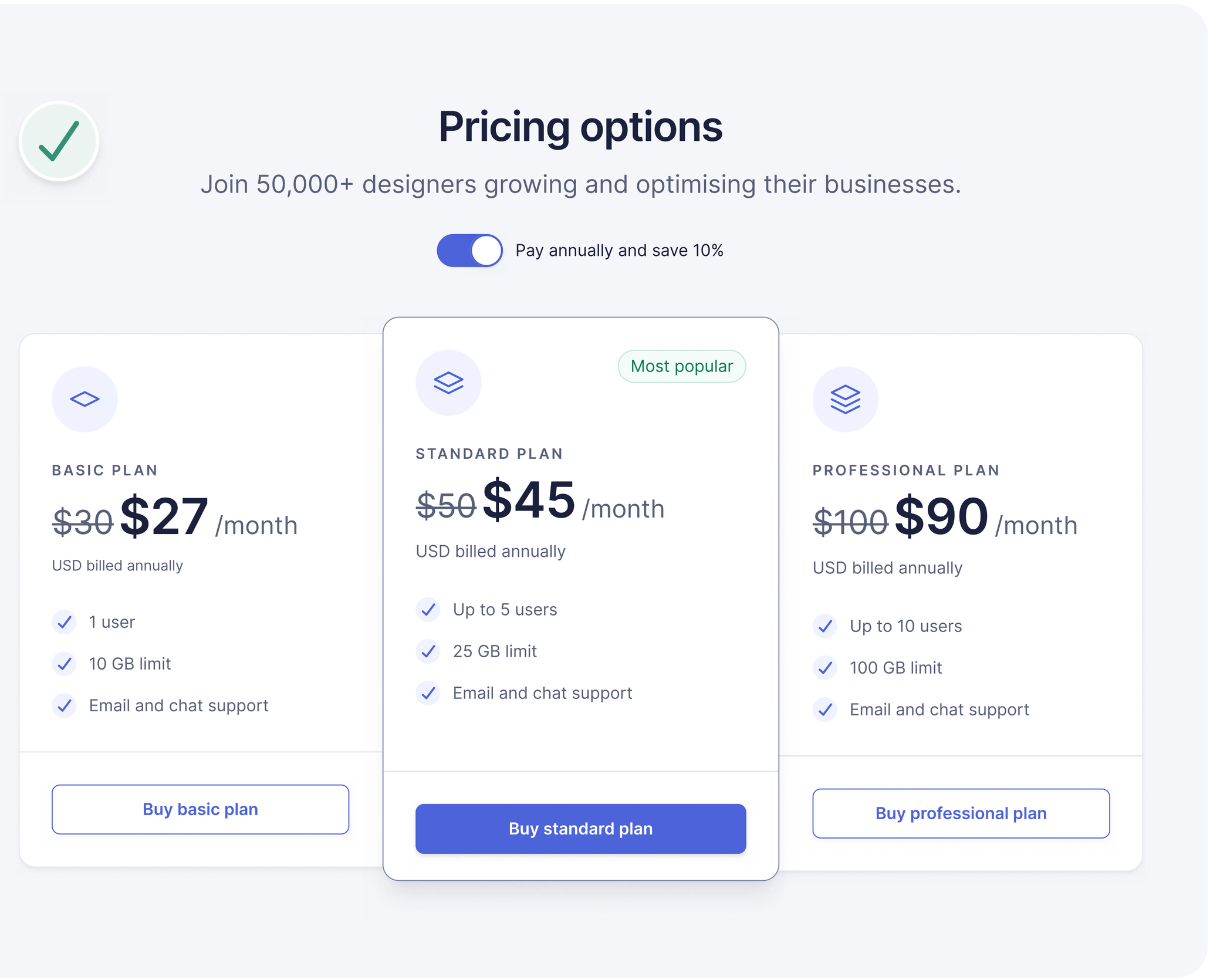
Use a single checkbox when a user needs to press a submit button before the option will take effect

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Toggle switch usage

Use a toggle switch for options that take immediate effect. Make sure the toggle switch label describes what will happen when the switch is on.

In the following example, a toggle switch is used to immediately change the pricing options without a submit button needing to be pressed.



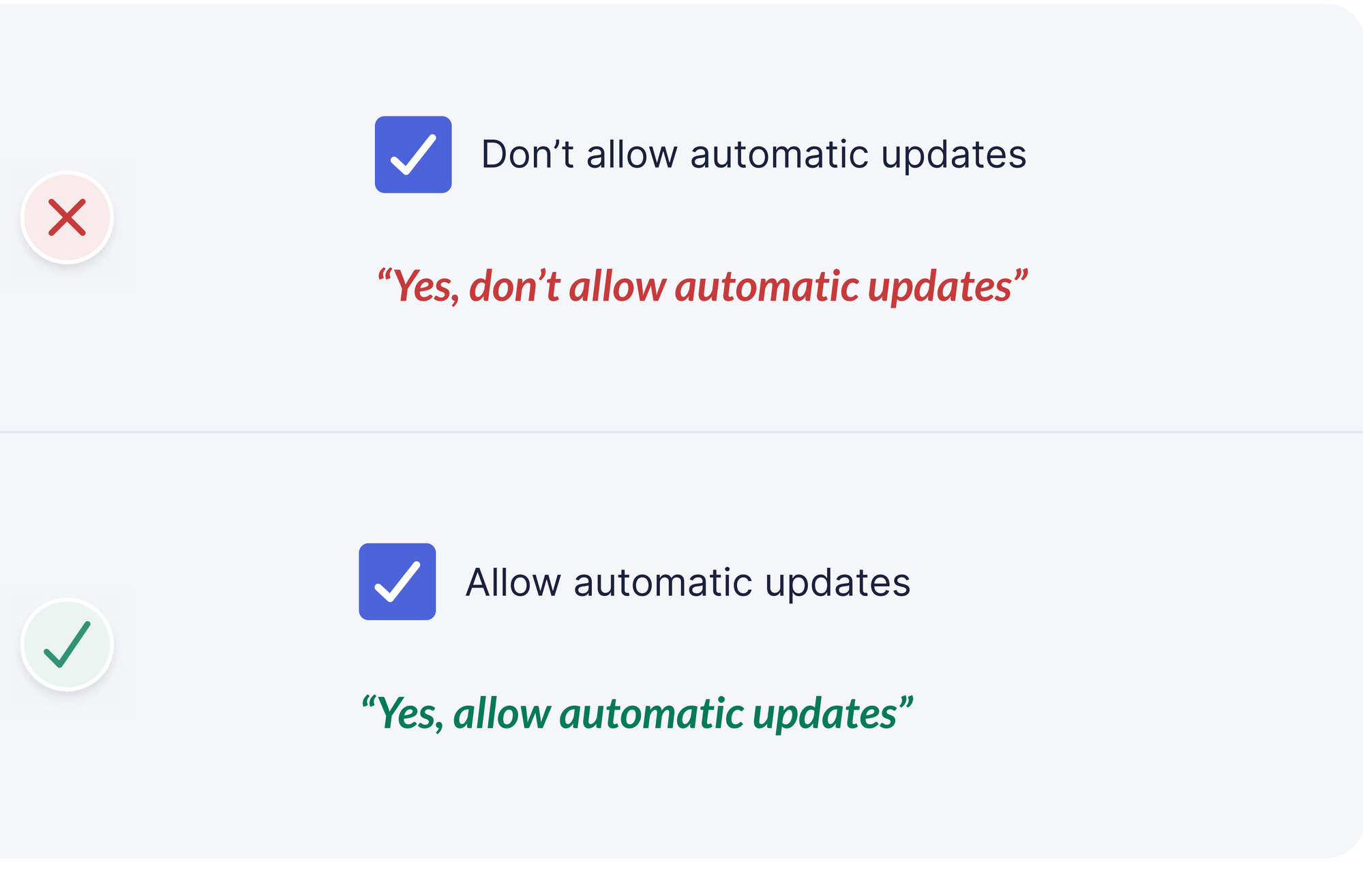
Use a toggle switch for options that take immediate effect

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Use positive phrasing for checkboxes

It’s generally safest to use positive phrasing for checkbox labels to avoid confusion. Describe what **will** happen when the checkbox is selected, rather than what **won’t** happen.

A simple way to test whether you’re using positive phrasing is to replace the selected checkbox with the word “yes”. If the resulting sentence has conflicts or is unclear, then you’re using negative phrasing.



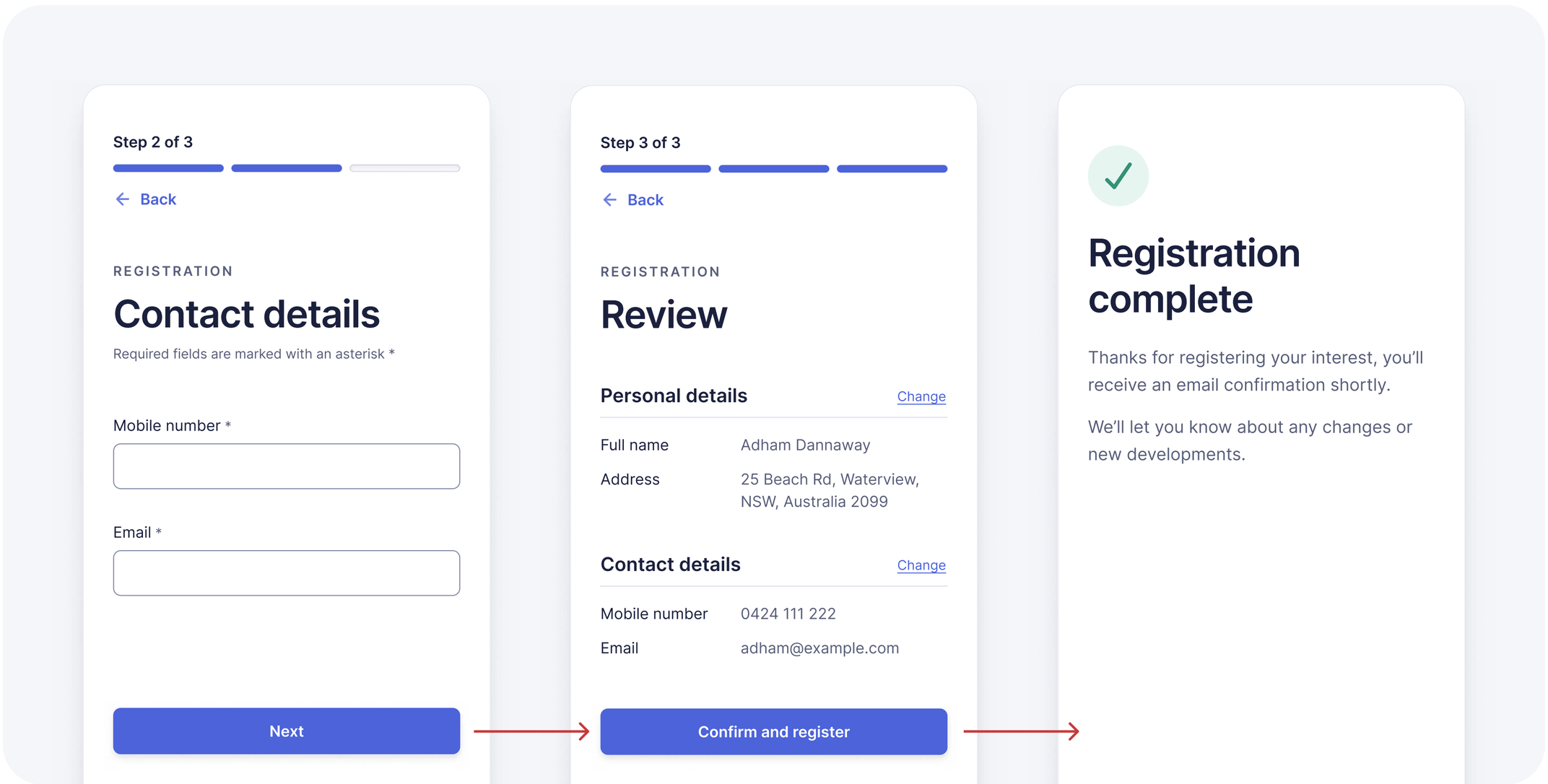
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Break up long forms into multiple steps

Break up long forms into multiple smaller steps to decrease cognitive load, reduce mistakes, and improve completion rates. Breaking up forms makes them seem less overwhelming, as people can focus on one thing at a time.

Quick tips for designing multi-step forms:

- Let people know how long the form will take to complete and what they'll need before they start.
- Break up a 30 question form into 6 steps of 5 related questions, rather than 30 steps. This helps to reduce interaction cost.
- Order questions from easiest to hardest so people achieve early wins.
- Indicate progress as people fill out the form. They'll feel more motivated as they approach the end (according to the Goal-Gradient Effect).
- Allow people to review and change their answers before submitting them. Once submitted, display a success message and let people know what to expect next.

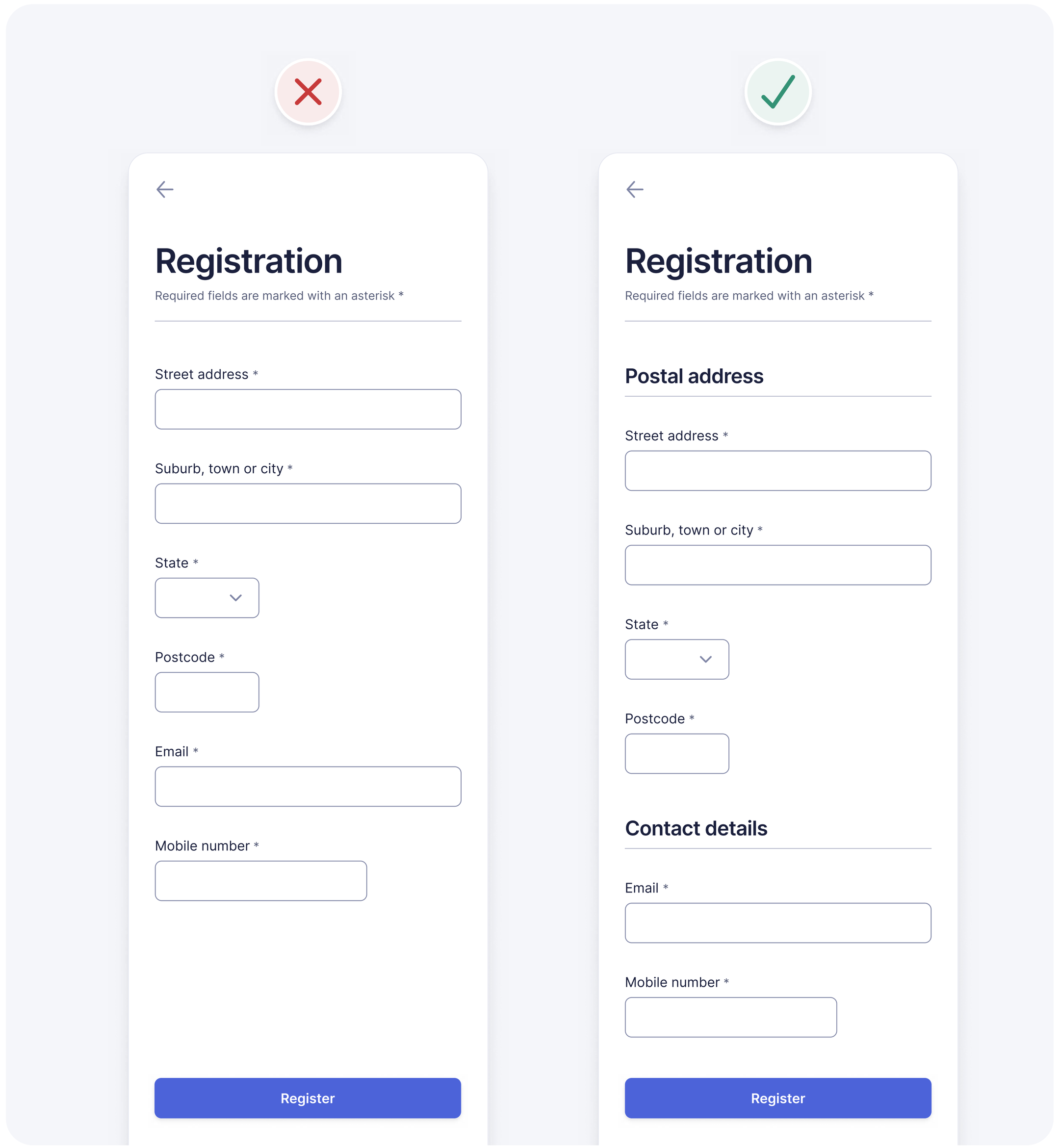


Multi-step form flow with progress indicator

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Group related fields under headings

If you can’t break up a long form into multiple separate steps, group related fields together under headings. Grouping will make the form seem less overwhelming and make it easier for people to understand and complete.



Example of a form with ungrouped fields versus one with grouped related fields

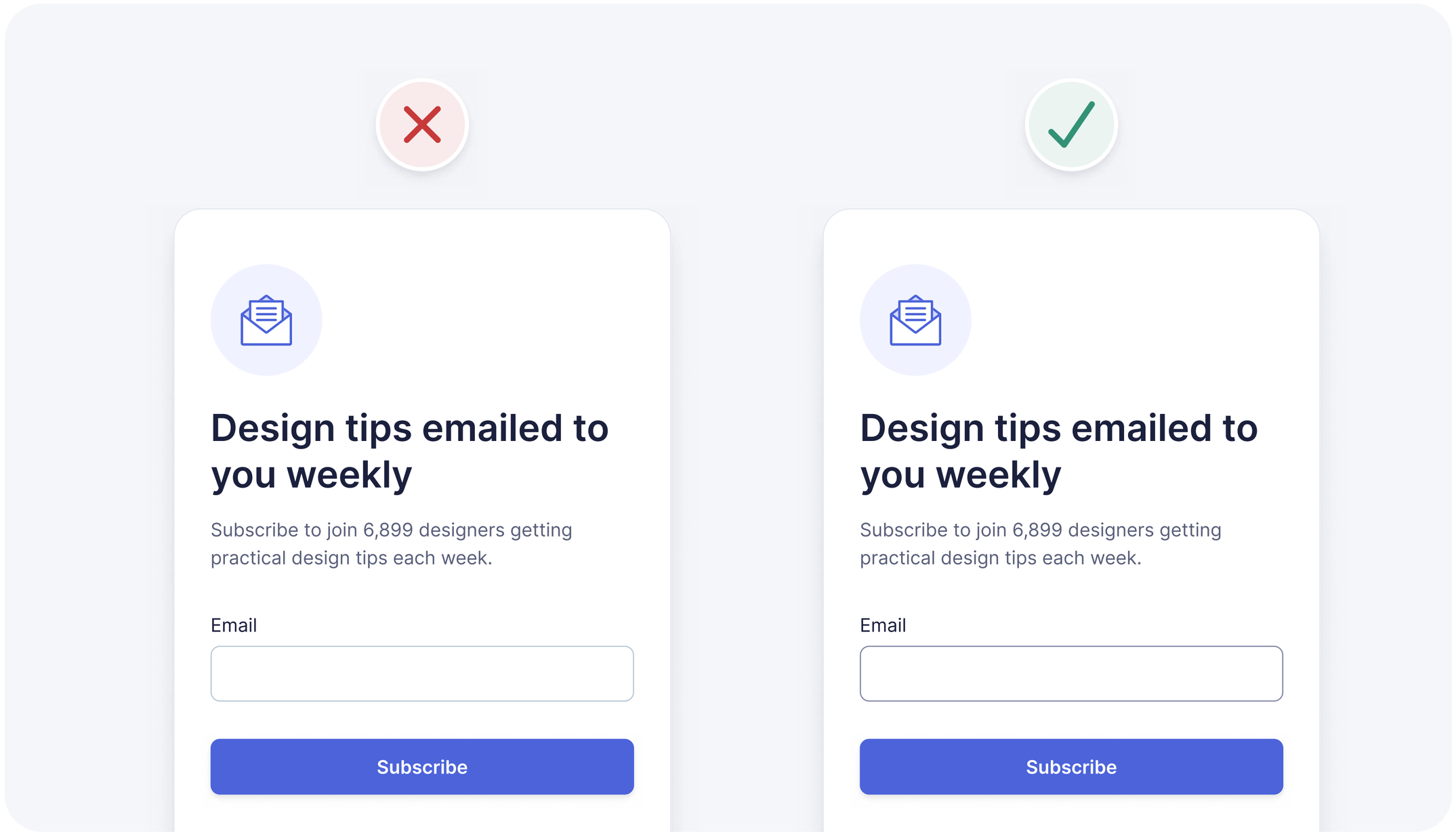
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Ensure form field borders are high contrast

Low contrast form fields are one of the most common UI design mistakes. Light borders on form fields can look nice, but there's a risk that some people may have difficulty seeing the borders. It could be someone with low vision or even a sighted user viewing the interface outside on a sunny day.

Borders are a distinctive detail that differentiate form fields from other interface elements. Without borders, it's unclear how to interact with a form field. Make sure the contrast ratio of form field borders is at least 3:1. This rule applies to any interface element to ensure it's accessible: buttons, toggle switches, inputs, steppers, checkboxes, and radio buttons.

If an interface element isn't purely for decorative purposes, it needs to have sufficient contrast to ensure that what it does and how it works is clear.



Low contrast form field border versus one with a sufficient 3:1 contrast ratio

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Choose your form validation approach

Even if your forms are well-designed, people will still make mistakes. Form validation is the process of checking whether a person has answered all required questions in a form and whether they have answered them correctly. If they miss a question or make a mistake, let them know and help them fix it.

There are 3 main approaches to validate forms:

1. Validate on submit of the form
2. Validate after people leave a field
3. Validate instantly as people type

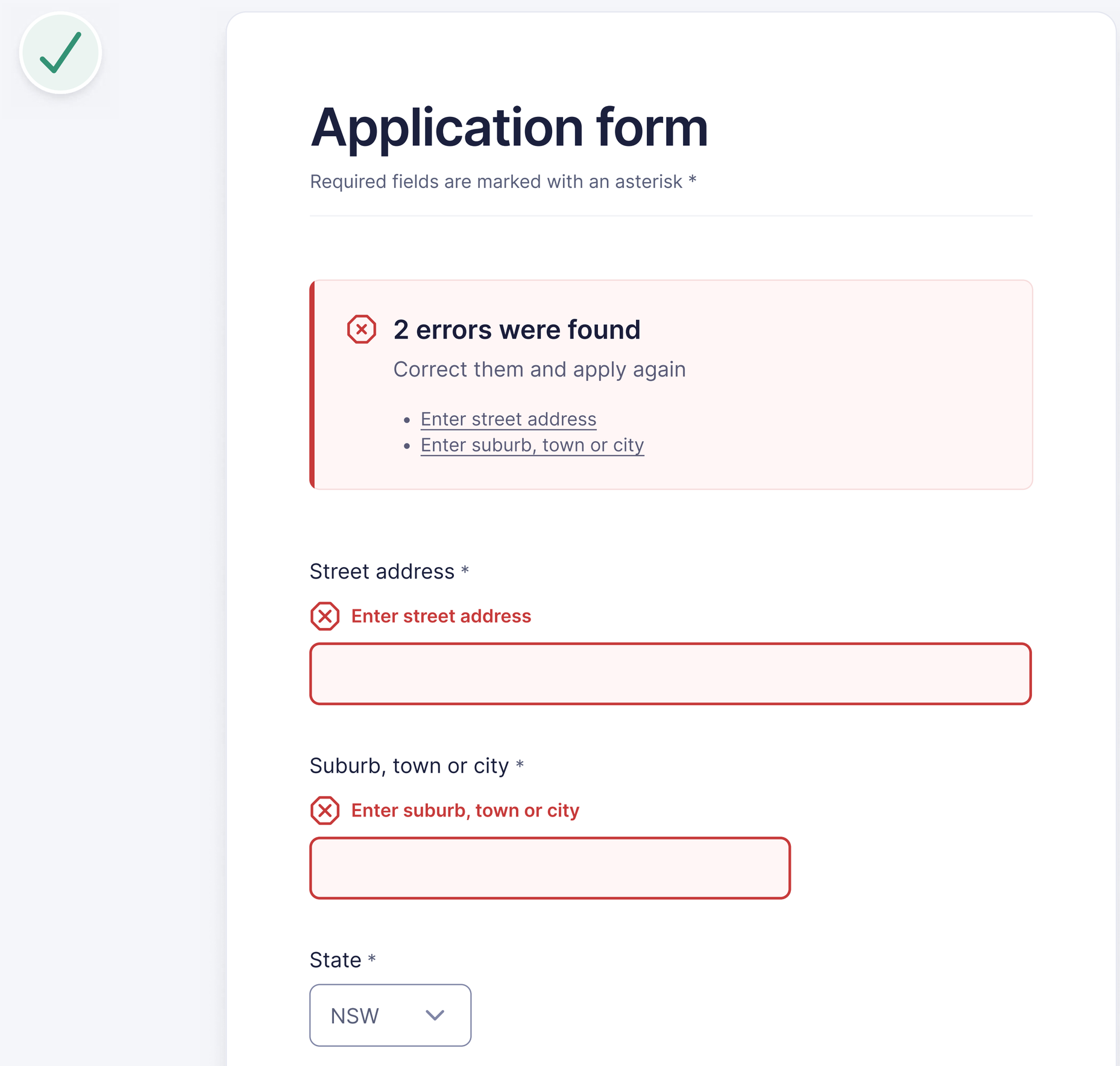
The first is the simplest and easiest to design and build. Each subsequent approach becomes more complex and challenging to create. Depending on the types of questions you’re asking in your form, you might consider using multiple approaches.

Let’s look at the advantages and disadvantages of each.

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1. Validate on submit of the form

If you’re low on time and development resources, keep it simple and validate the form once a person submits it. It may sound simplistic, but it’s the way forms were originally designed and it’s still a valid approach.



A list of errors with links are displayed at the top of the form after it’s submitted

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Quick guidelines for validating forms on submit:

- Display a prominent error message above invalid form fields (rather than below) to help ensure errors are always visible. The space below form fields can be covered by autofill menus and on-screen keyboards.
- Use a red border and background shade to prominently highlight invalid fields. Make sure you also include an icon for people who are colour blind. Never rely on colour alone to distinguish interface elements.
- If there are multiple errors, let people know how many there are and list them at the top of the form. Make the listed errors links that take people to the corresponding invalid field.
- Don’t disable the submit button, as disabled buttons can be problematic.

Advantages

- Relatively simple and easy to implement.
- Allows people to focus on form completion without distractions.

Disadvantages

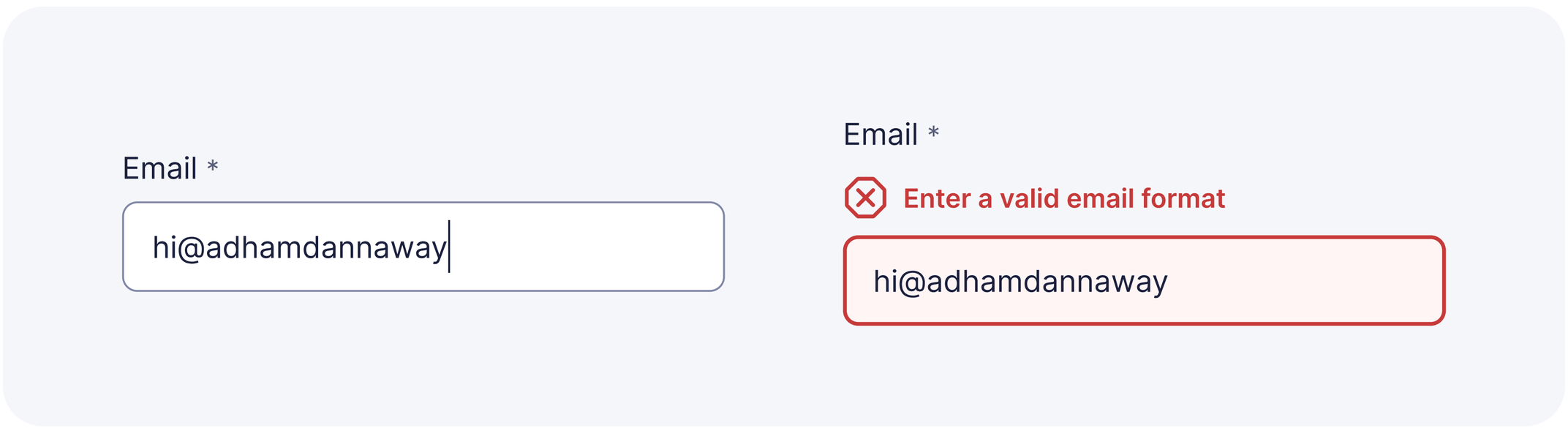
- As people are completing a form, they have no idea whether they’re answering questions correctly or not.
- People could be overwhelmed and frustrated by facing multiple errors all at once.
- People are forced to navigate through the entire form again to find and fix errors when they may have lost context.
- It doesn't work when people need assistance promptly, such as when someone requires help creating a password that meets specific criteria.

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2. Validate after people leave a field

Rather than informing people of errors after they’ve completed a form, this approach lets them know if they’ve made a mistake immediately after they’ve completed a field. Validating after people leave a field is commonly known as inline validation or validating “on blur”.

Remove the error message once the error has been resolved to let people know they've fixed it. This involves using the third validation approach (validating instantly as people type).



Email is validated once a person leaves the field

Advantages

- People receive immediate feedback, so they're not left wondering whether they’re answering questions correctly or not.
- People can fix errors faster while they still have context.
- It can be used to provide positive feedback for correct inputs, such as confirming that a password meets certain criteria.

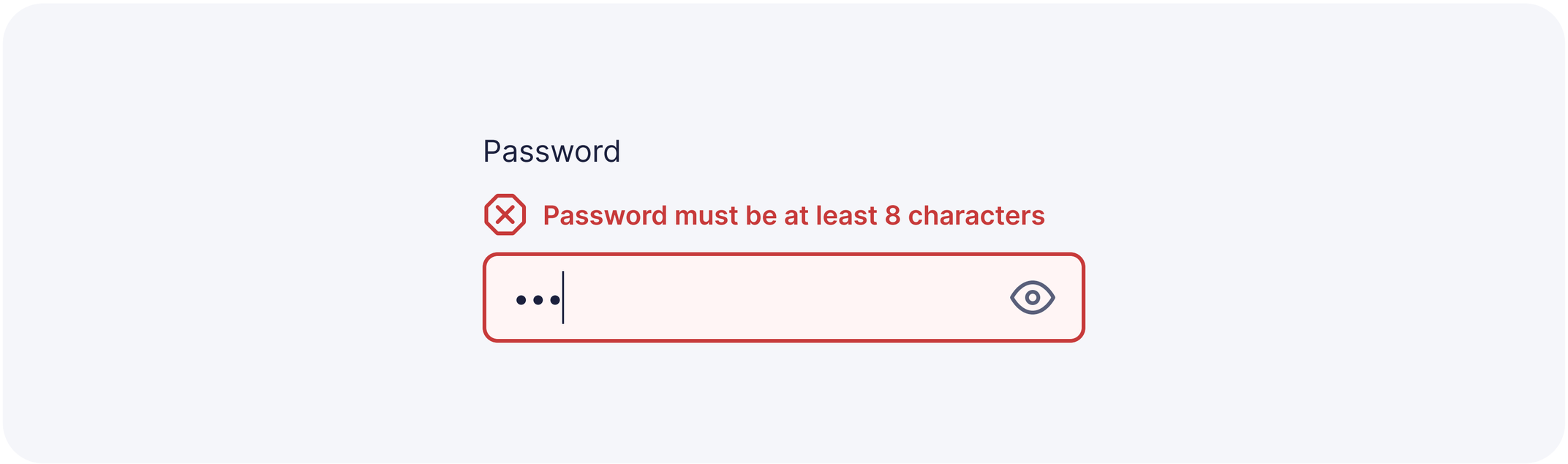
Disadvantages

- People could be distracted by the need to repeatedly switch between answering questions and fixing errors.
- It doesn’t work well for groups of inputs, such as a list of checkboxes.
- It can be relatively complex to implement.

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3. Validate instantly as people type

This approach waits until people have stopped typing their answer before validating it. To help prevent premature error messages, a delay is typically introduced once they’ve stopped typing.



Password is validated as a person types

Advantages

- It helps people work toward an answer. For example, creating a password that needs to meet certain criteria or checking if a username is available.
- People receive immediate feedback, so they're not left wondering whether they’re answering questions correctly or not.
- People can fix errors faster while they still have context.

Disadvantages

- Premature error messages can frustrate people and hinder form completion. Since people type at different speeds, it’s difficult to know when they’ve finished typing their answer.
- It can be relatively complex to implement.

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Chapter summary

- Stack forms in a single column layout, as it decreases interaction cost by maintaining a consistent downward momentum.
- Mark both required and optional fields to avoid people guessing whether form fields are required or not.
- Match field width to the intended input, as the width sets people's expectations for the amount of information expected in the field.
- Rather than using dropdowns, consider using radio buttons, autocomplete search fields, or steppers, depending on the use case.
- Break up long forms into multiple smaller steps to decrease cognitive load, reduce mistakes, and improve completion rates.

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Congratulations

8 of 8 chapters completed

- Fundamentals
- Less is more
- Colour
- Layout and spacing
- Typography
- Copywriting
- Buttons
- **Forms**

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Conclusion

Some closing thoughts to help you excel on your design journey ahead

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Closing thoughts

Congratulations on levelling up your design skills. I hope you feel a lot more confident about designing intuitive, accessible, and beautiful interfaces.

My goal when writing this book was to equip you with a system of logical guidelines to help you make informed design decisions efficiently. Guidelines can seem restrictive, but they're not meant to limit your creativity. Instead, think of them as a solid foundation to build, explore, and experiment on.

After seeing the how and why behind each guideline, I think you'll agree that UI design is about much more than just making an interface look pretty.

Here's a quick recap of some of the key guidelines:

- Minimise usability risk by keeping interfaces simple and familiar.
- Don't just make design decisions based on what looks pretty, ensure that every interface detail has a logical reason behind it.
- Minimise interaction cost and cognitive load as much as possible.
- Create a design system of predefined styles, modular components, and usage guidelines to help you make consistent design decisions faster.
- Good accessibility means great usability, so design interfaces for everyone to use.

I hope this logic-driven approach to UI design will serve you as well in your career as it has in mine.

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Please review the book

If you found the book helpful, please take a few seconds to review it. I've spent literally thousands of hours working on every detail and I'd really appreciate your support. It will help me continue to make further improvements and grow the book.

Review the book at practical-ui.com/review

Got feedback?

I don't claim to know it all. In fact, it's quite the opposite. The more I learn, the more I realise how much I have yet to learn. I'm always open to hearing different ideas or having my ideas constructively challenged. That's how we learn and grow as designers.

I'd love for this book to grow and improve over time, so let me know if you have any thoughts or feedback at hi@adhamdannaway.com

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