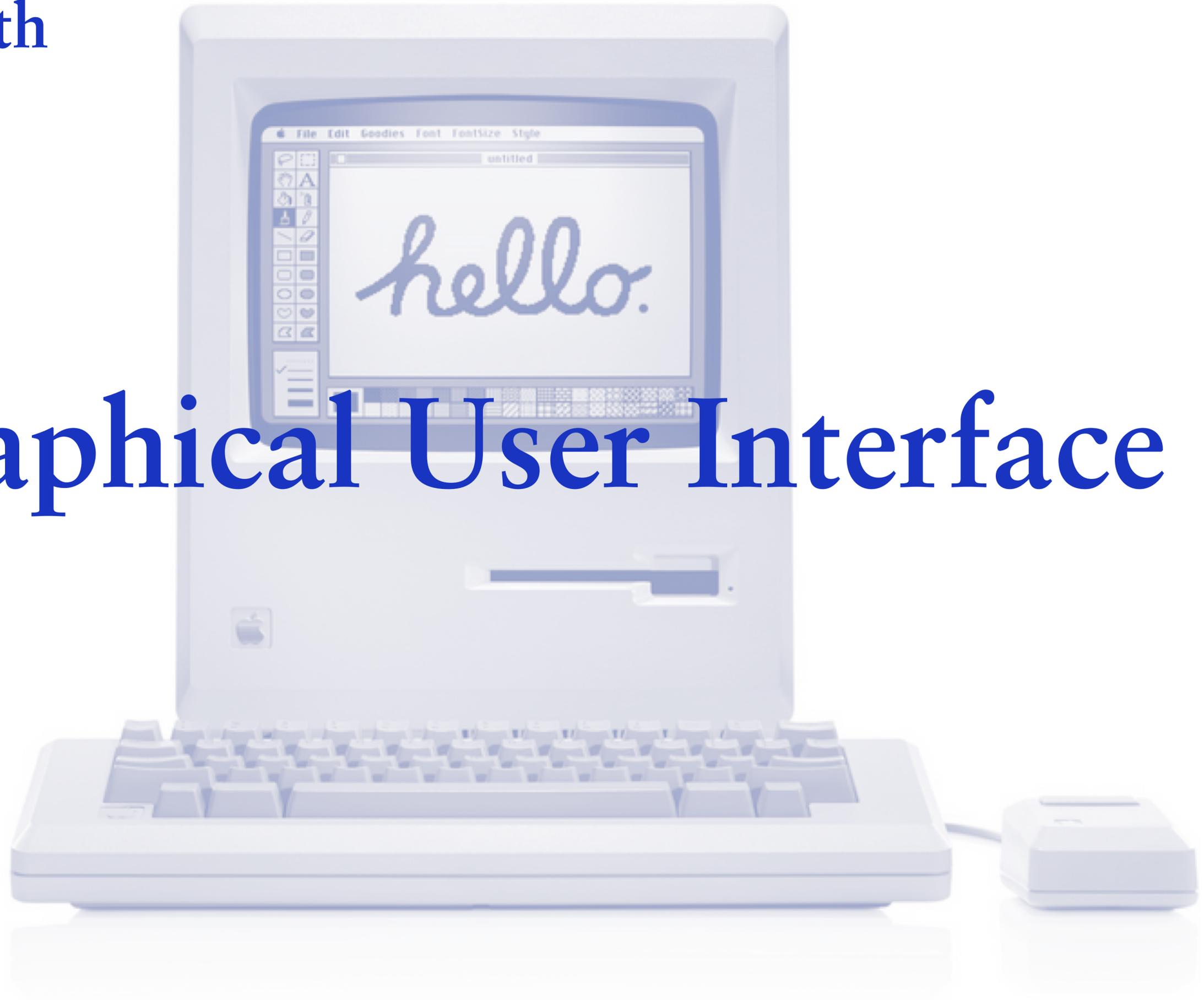


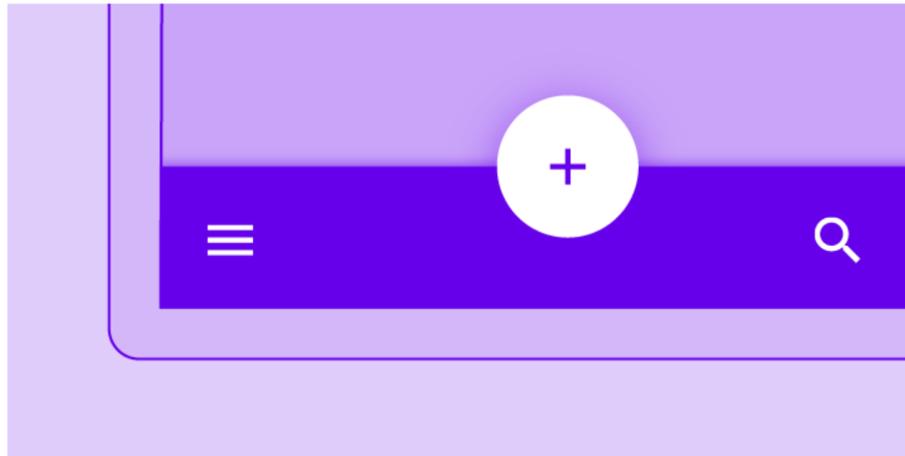
Jürgen Späth

# Graphical User Interface



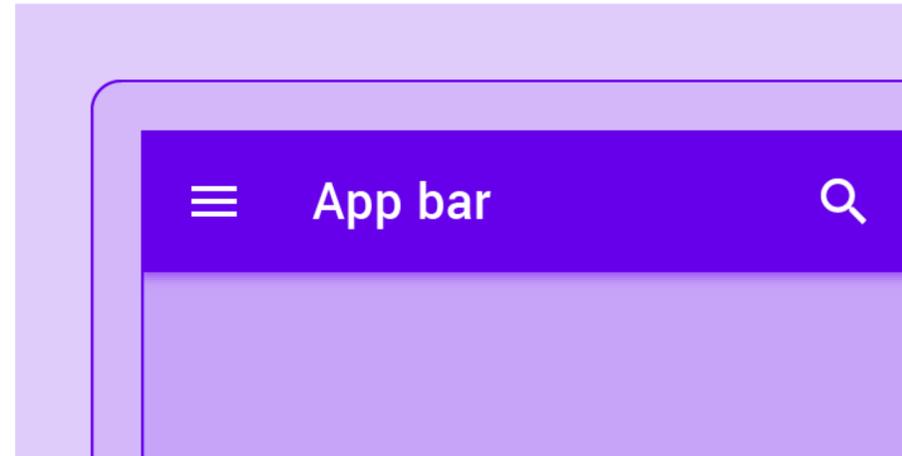
# Components

# Components



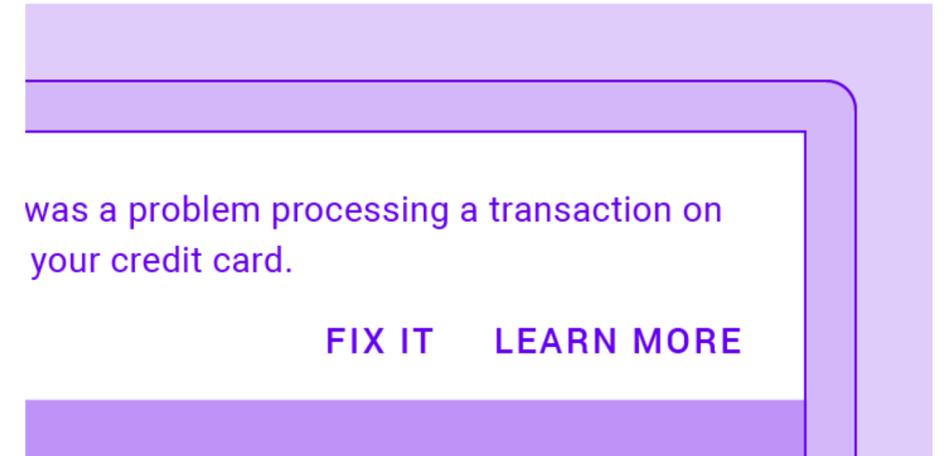
## App bars: bottom

A bottom app bar displays navigation and key actions at the bottom of mobile screens



## App bars: top

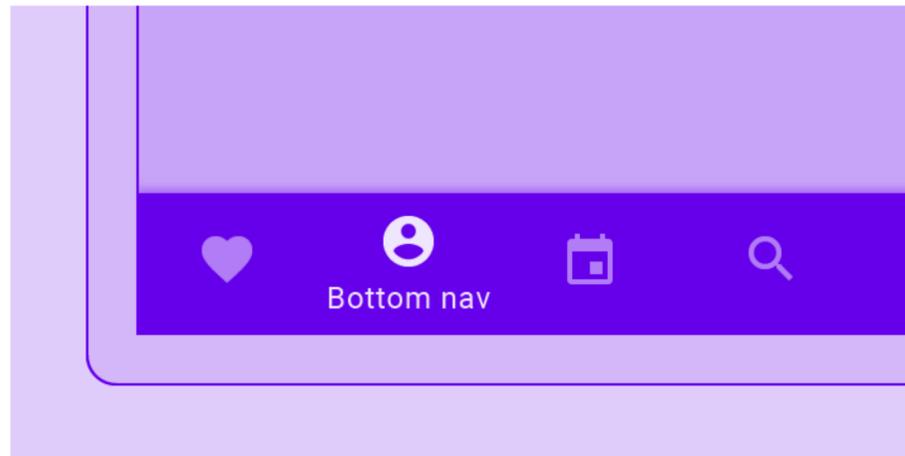
The top app bar displays information and actions relating to the current screen



## Banners

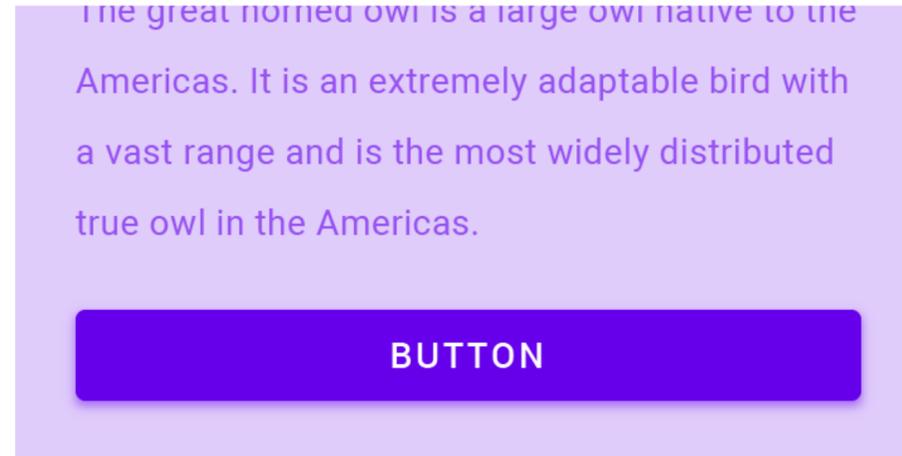
A banner displays a prominent message and related optional actions

# Components



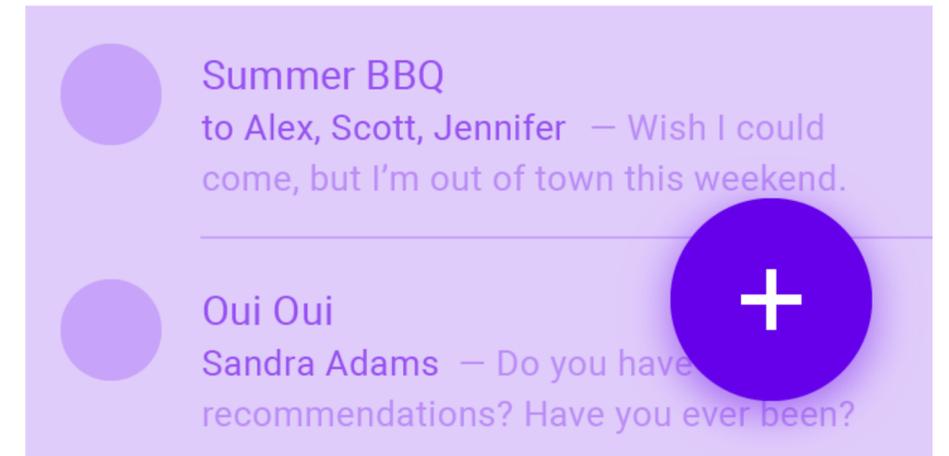
## Bottom navigation

Bottom navigation bars allow movement between primary destinations in an app



## Buttons

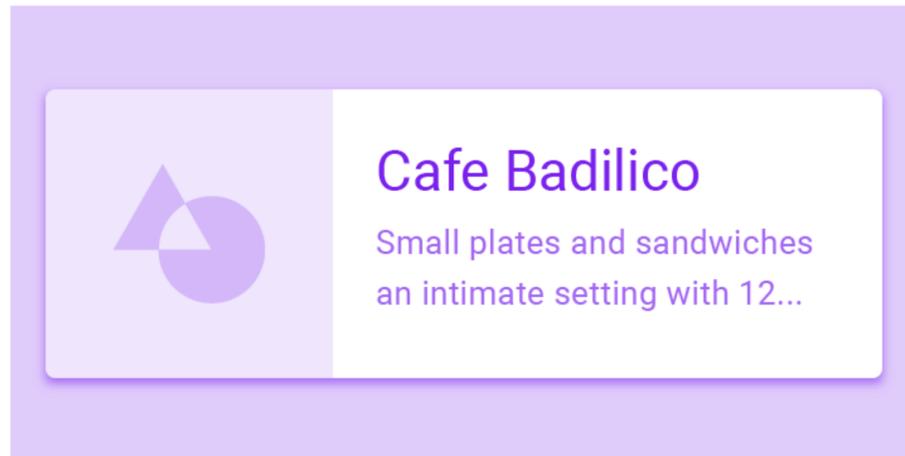
Buttons allow users to take actions, and make choices, with a single tap



## Floating action button

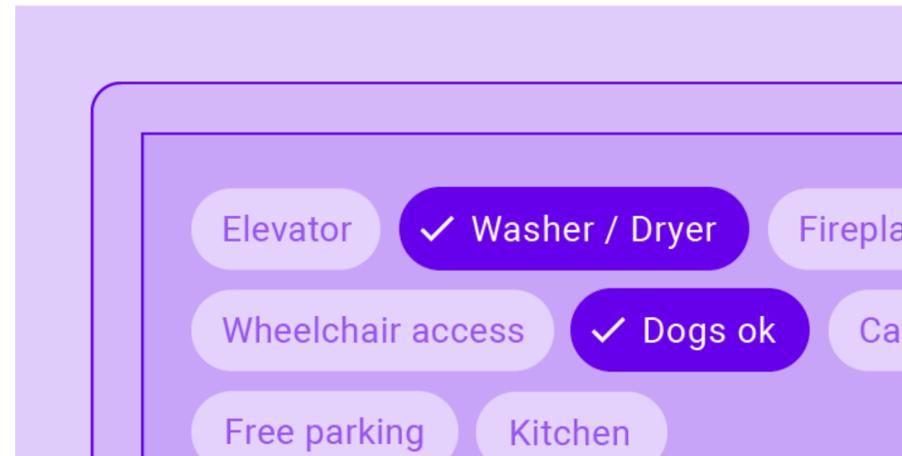
A floating action button (FAB) represents the primary action of a screen

# Components



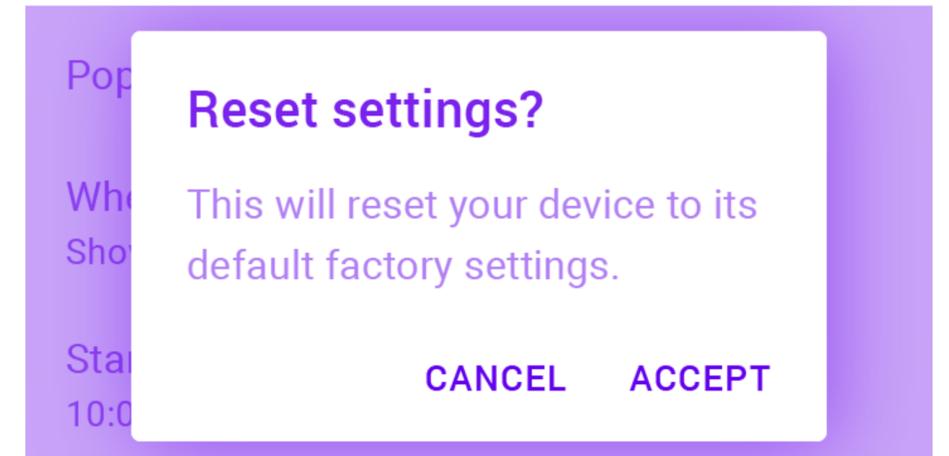
## Cards

Cards contain content and actions about a single subject



## Chips

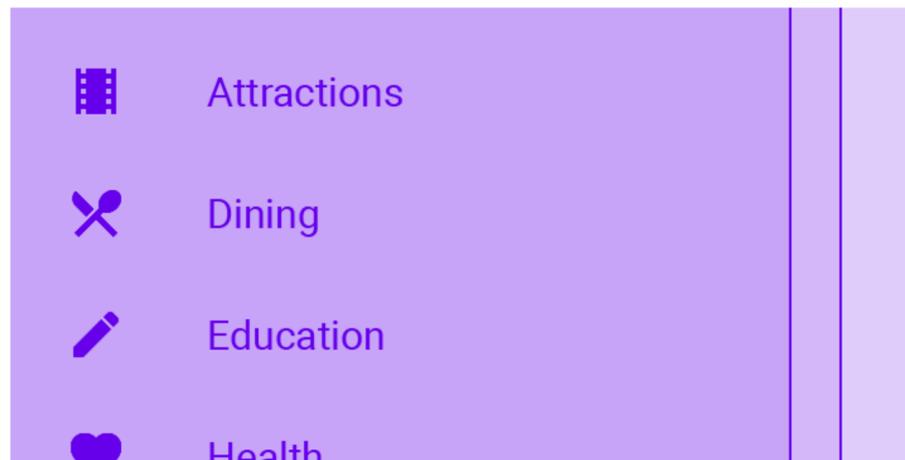
Chips are compact elements that represent an input, attribute, or action



## Dialogs

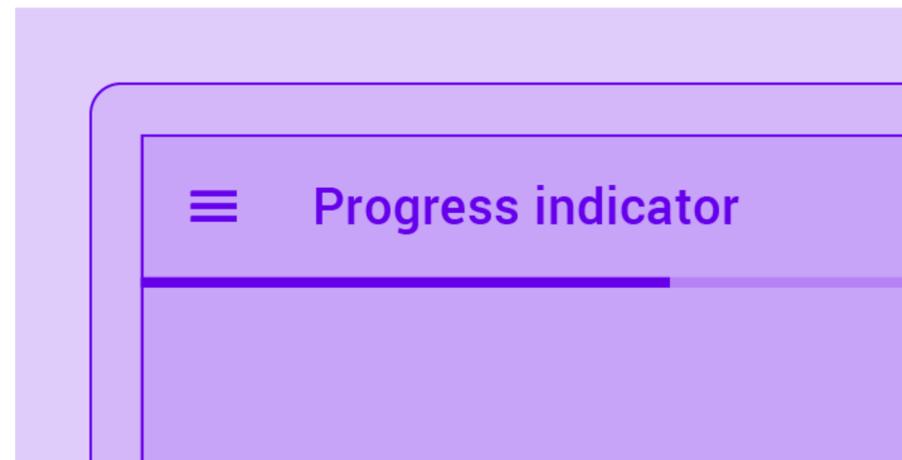
Dialogs inform users about a task and can contain critical information, require decisions, or involve multiple tasks

# Components



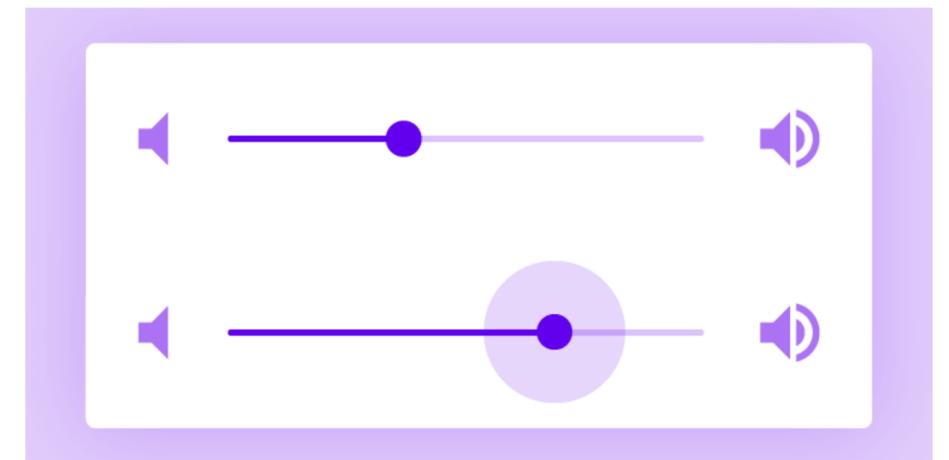
## Lists

Lists are continuous, vertical indexes of text or images



## Progress indicators

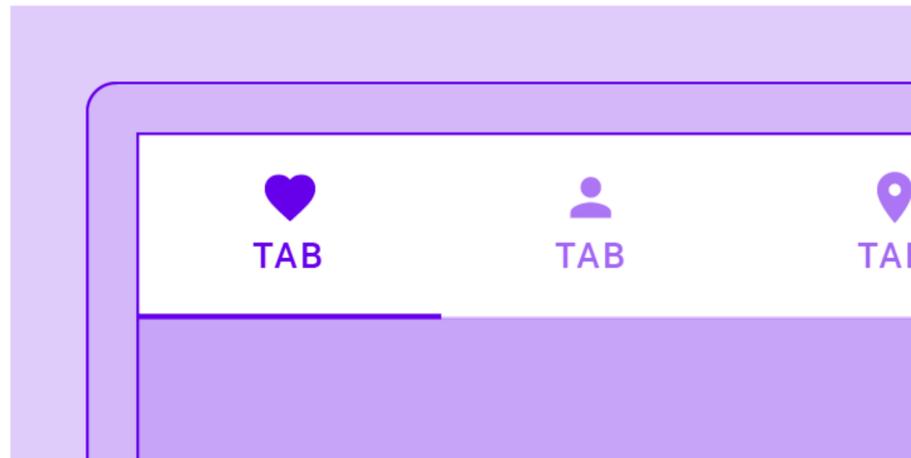
Progress indicators express an unspecified wait time or display the length of a process



## Sliders

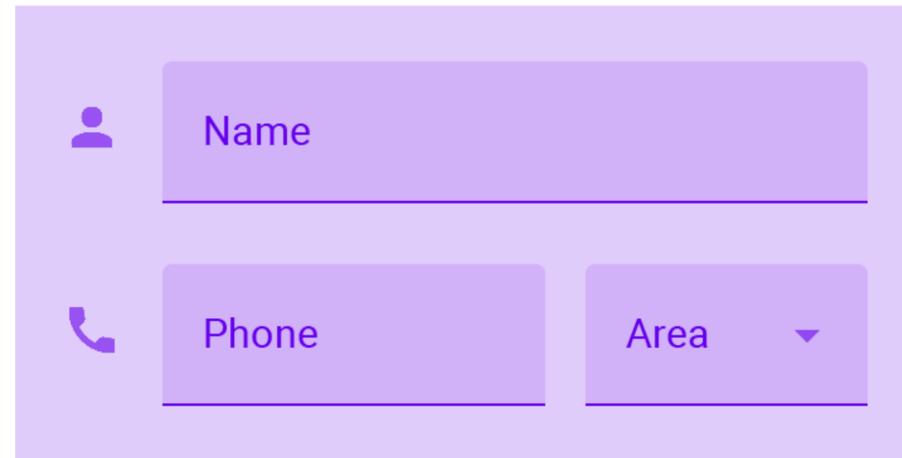
Sliders allow users to make selections from a range of values

# Components



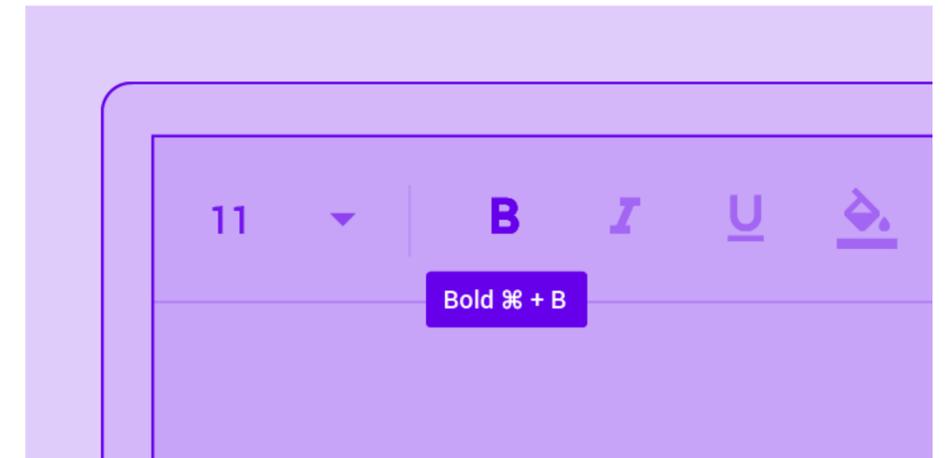
## Tabs

Tabs organize content across different screens, data sets, and other interactions



## Text fields

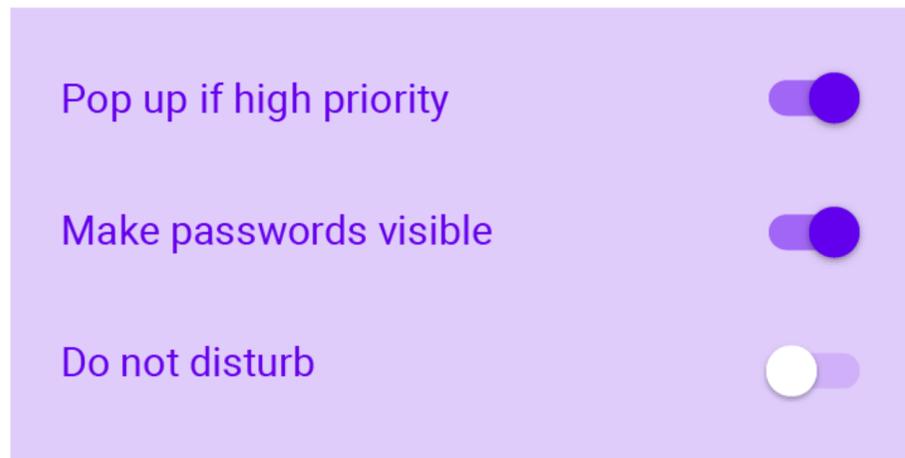
Text fields let users enter and edit text



## Tooltips

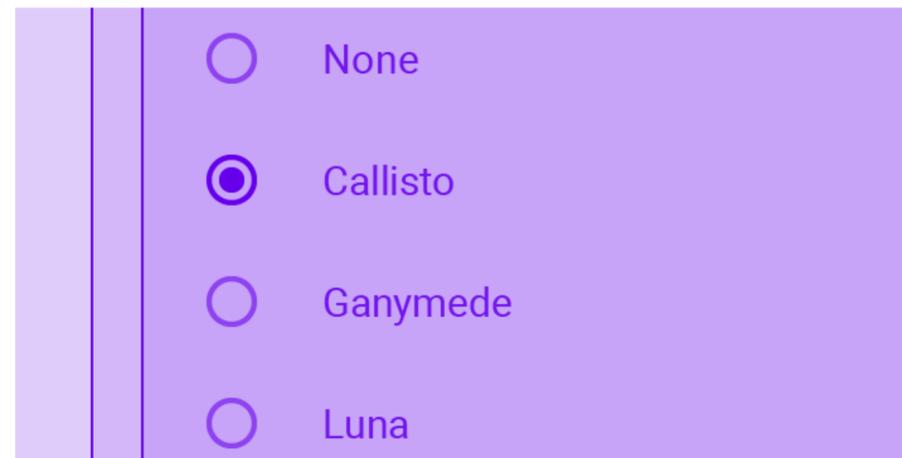
Tooltips display informative text when users hover, focus, or tap an element

# Components



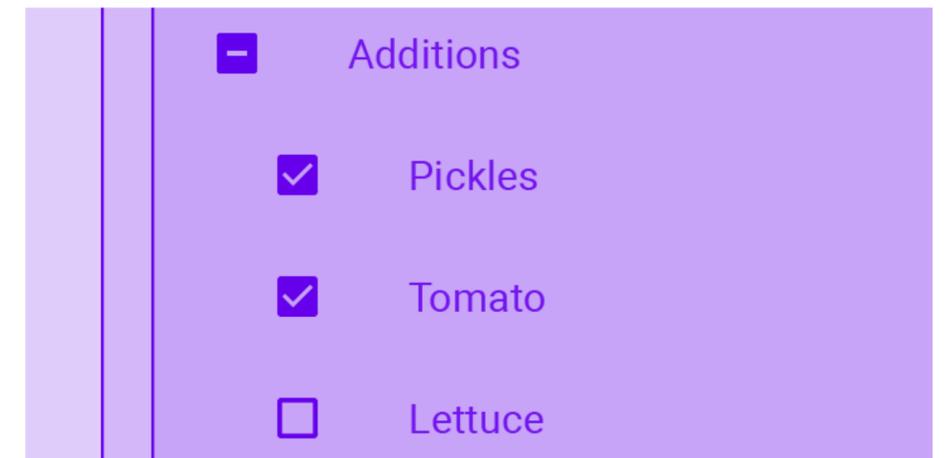
## Switches

Switches toggle the state of a single setting on or off



## Radio buttons

Radio buttons allow the user to select one option from a set



## Checkboxes

Checkboxes allow the user to select one or more items from a set or turn an option on or off

# Components



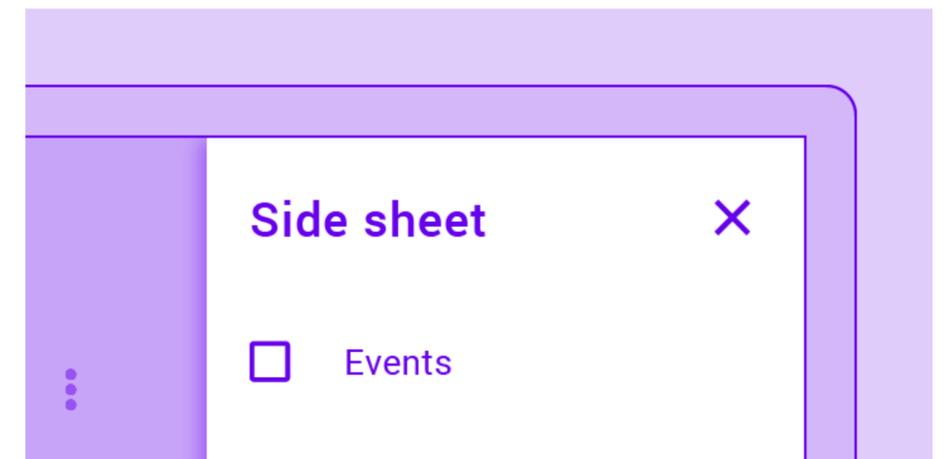
## Dividers

A divider is a thin line that groups content in lists and layouts



## Data pickers

Data pickers let users select a date, or a range of dates



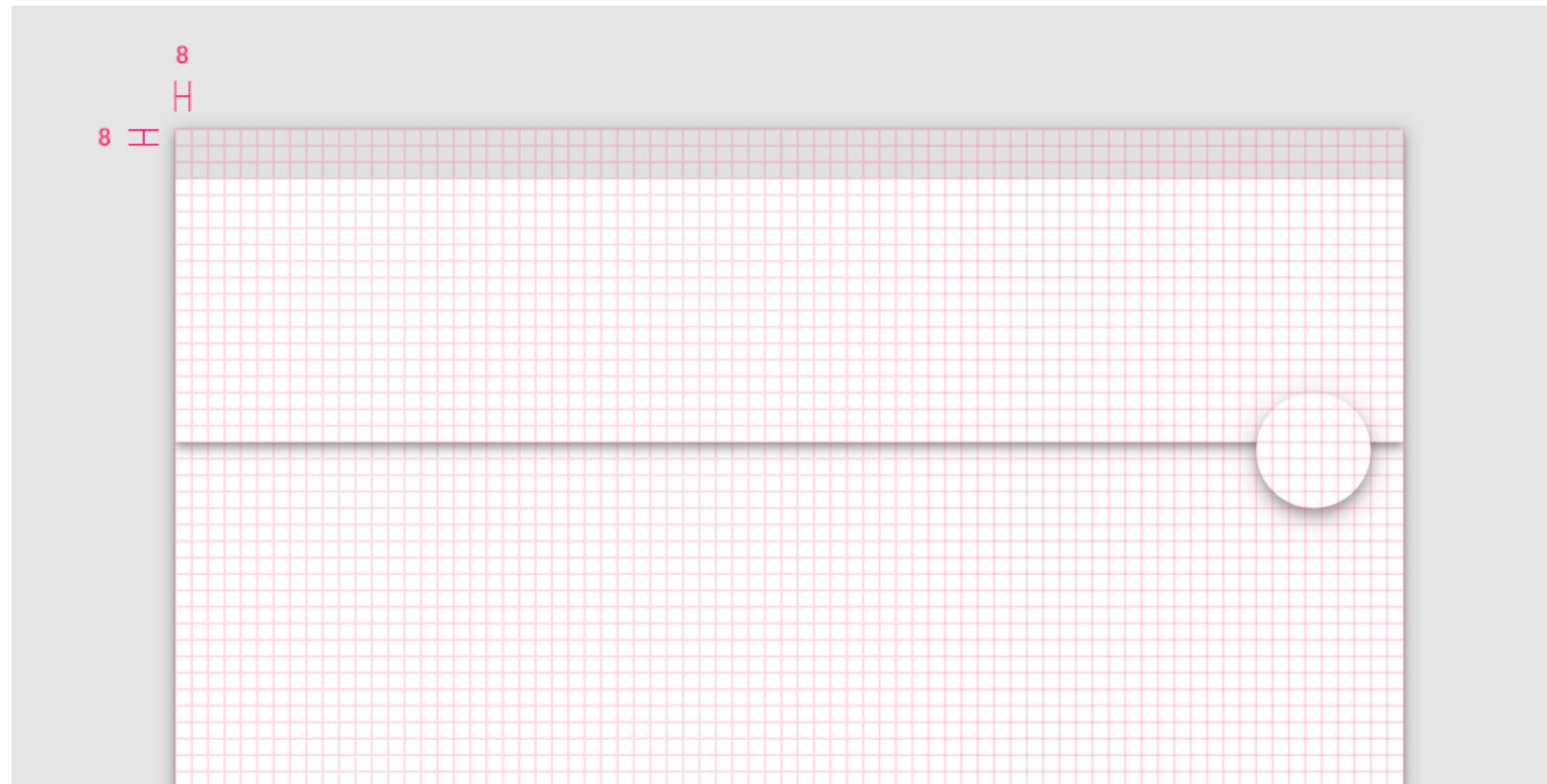
## Sheets side

Side sheets are surfaces containing supplementary content that are anchored to the left or right edge of the screen

Grid

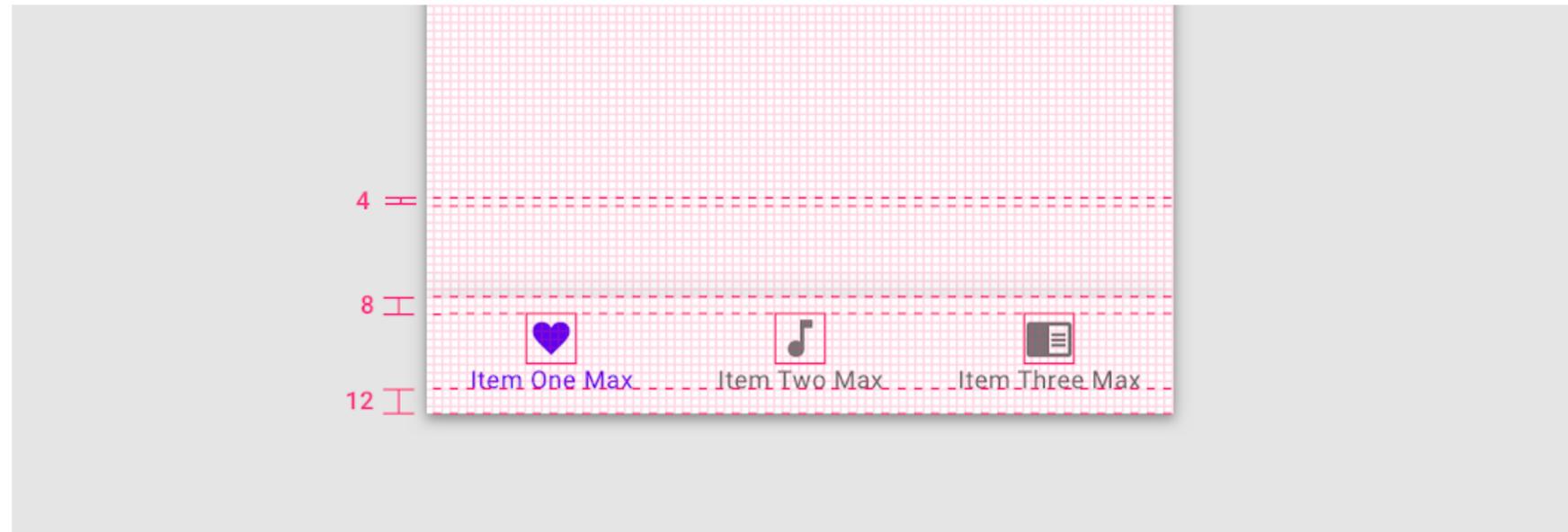
# 8dp Grid

All components align to an 8dp square baseline grid for mobile, tablet, and desktop.



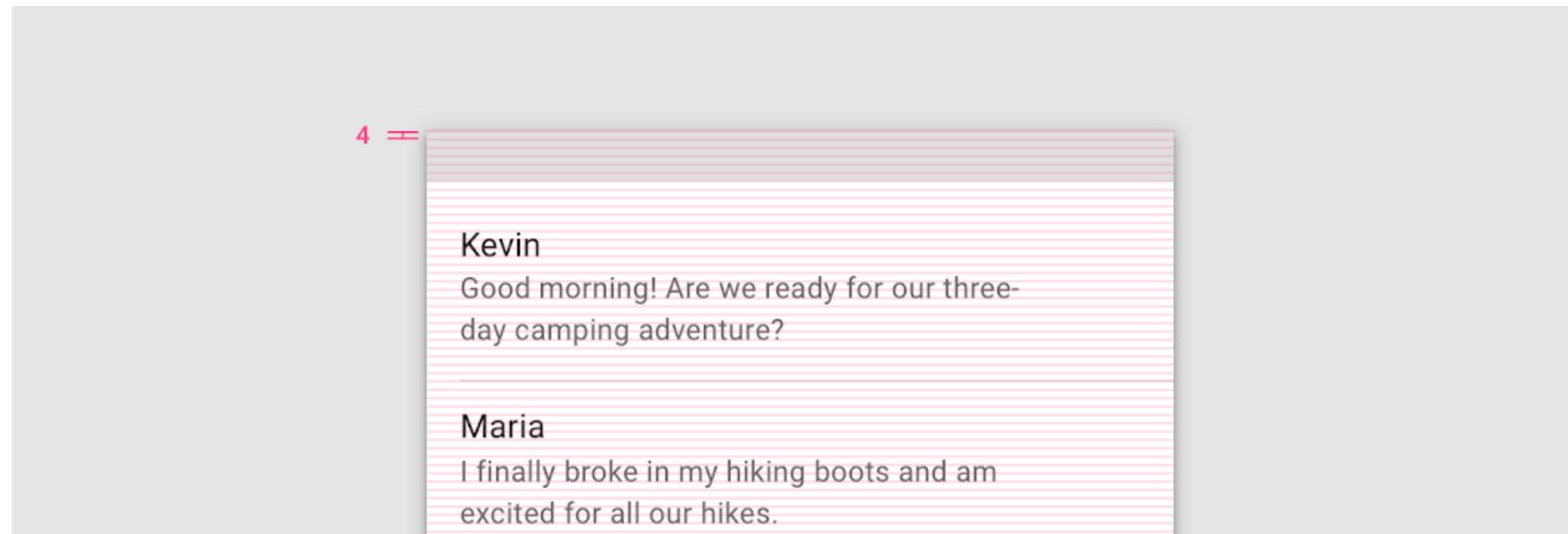
# 4dp Grid

Icons, type, and some elements within components can align to a 4dp grid.



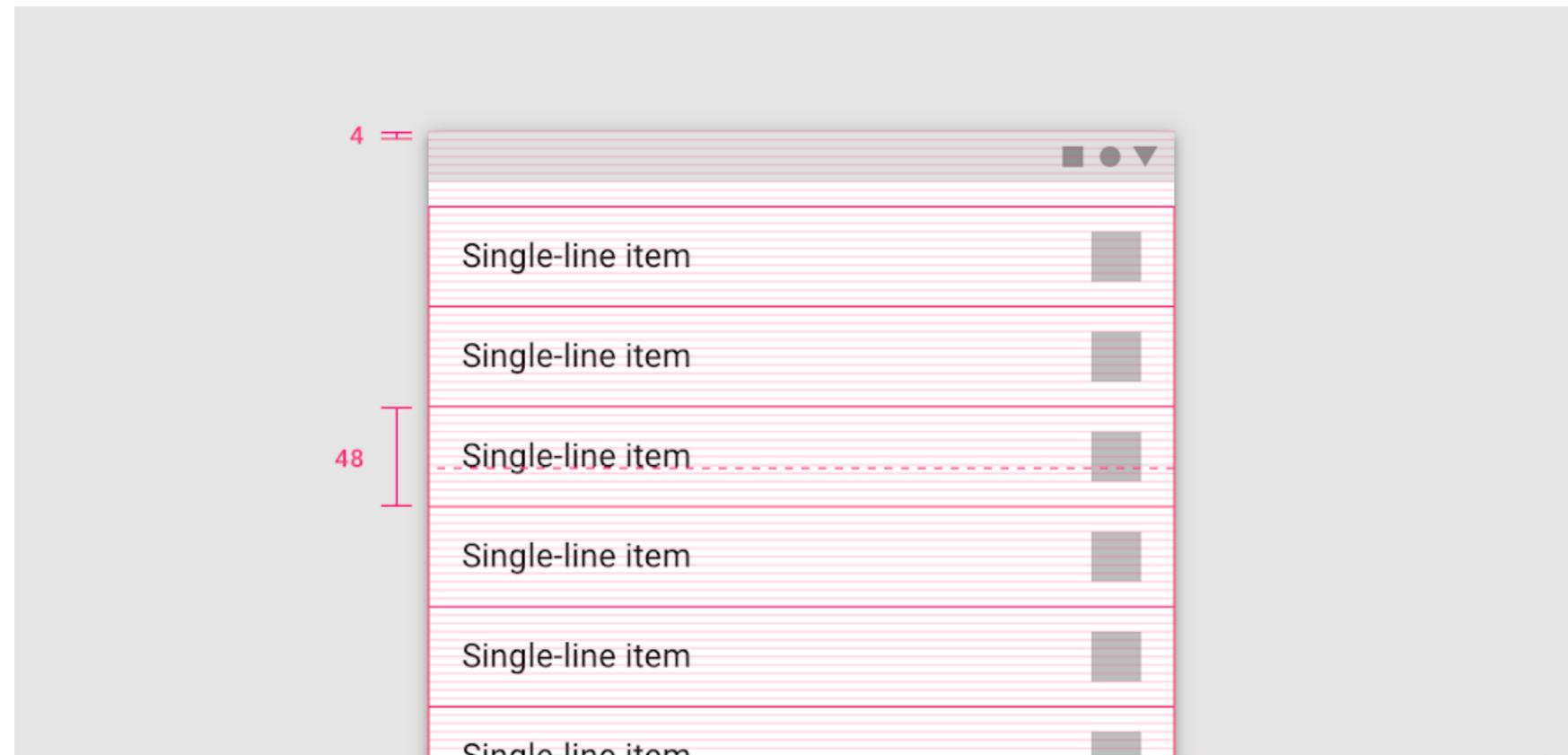
# 4dp Baseline Grid

Type aligns to the 4dp baseline grid.



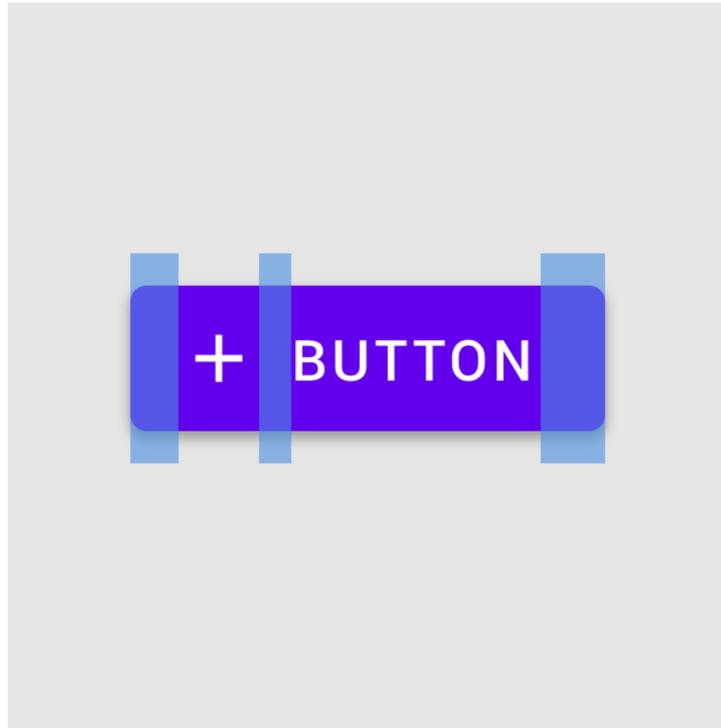
# 4dp Baseline Grid

Type can be placed outside of the 4dp grid when it's centered within a component, such as a button or list item.



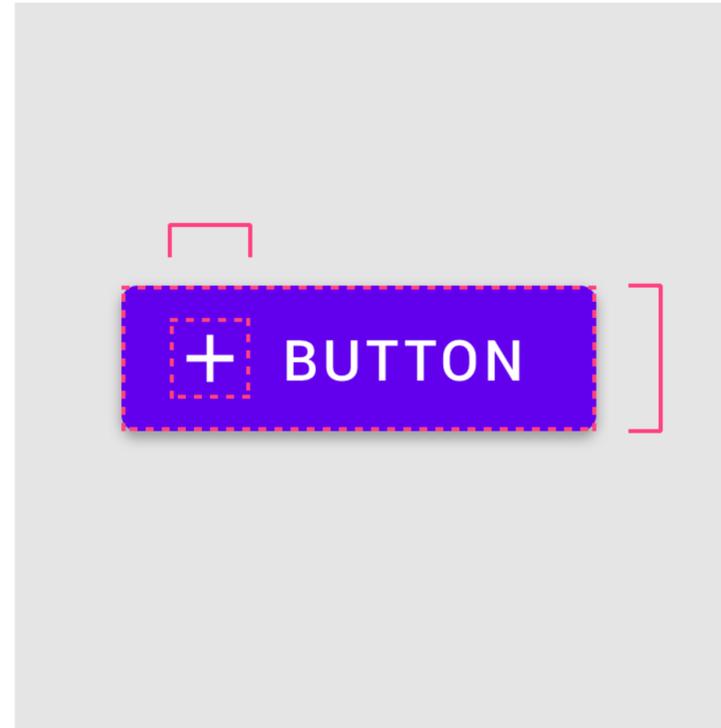
# Spacing

Spacing methods are more granular.



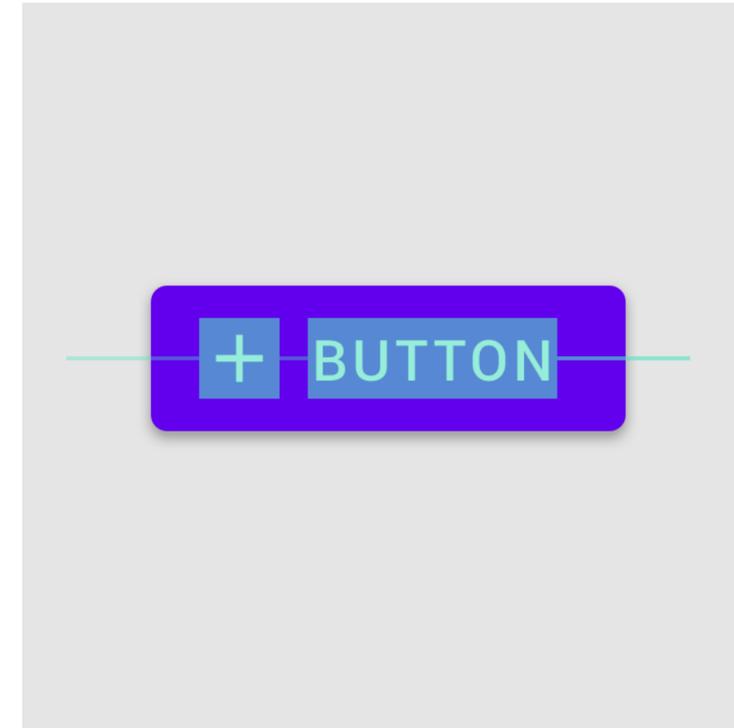
## Padding

Padding is the space between elements within a component.



## Dimensions

Dimensions describe the width and height of component elements.

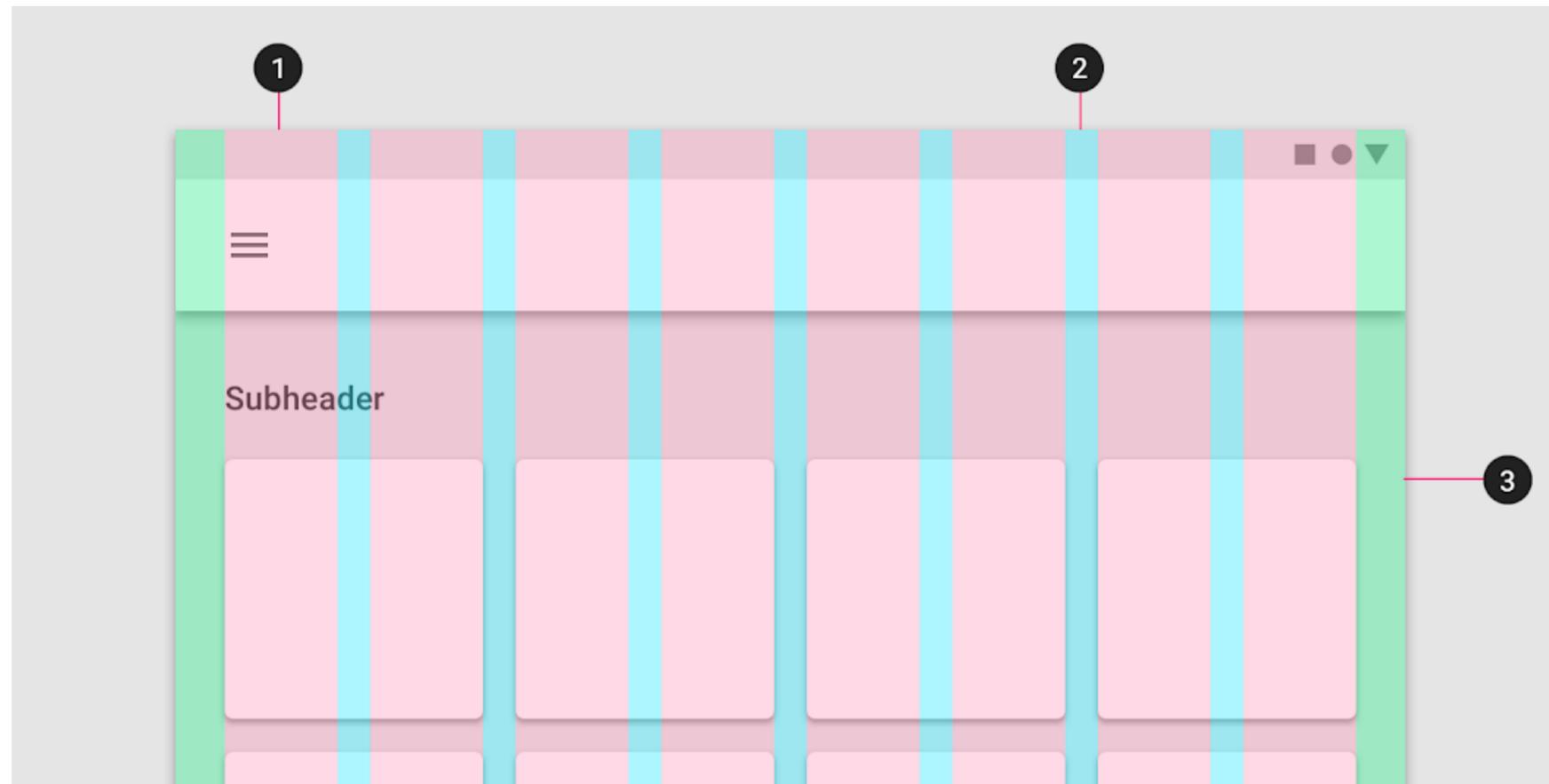


## Alignment

Alignment is the placement of elements within a component.

# Columns, Gutters and Margins

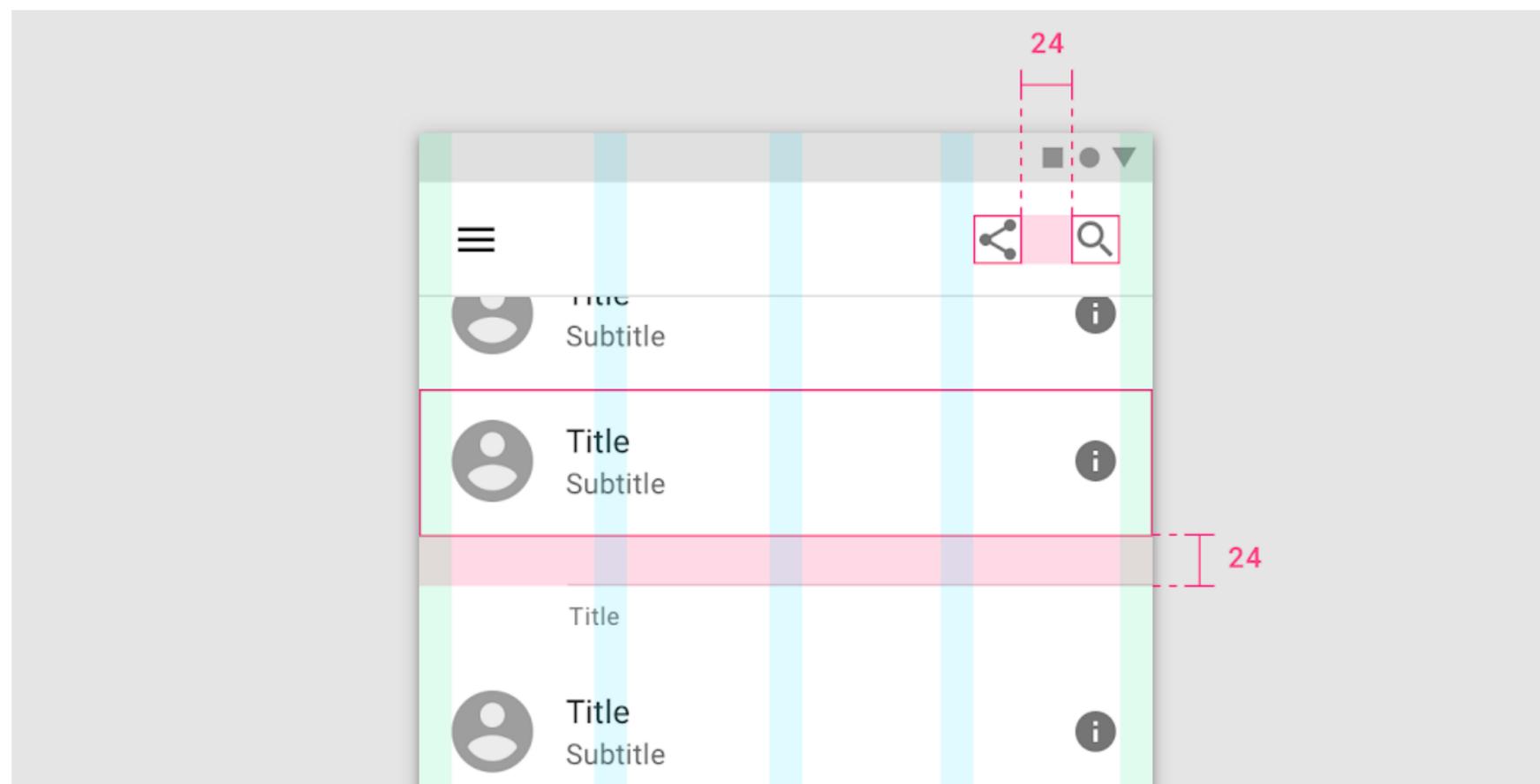
- 1 Content is placed in the areas of the screen that contain columns.
- 2 A gutter is the space between columns that helps separate content.
- 3 Margins are the space between content and the left and right edges of the screen.



# Padding

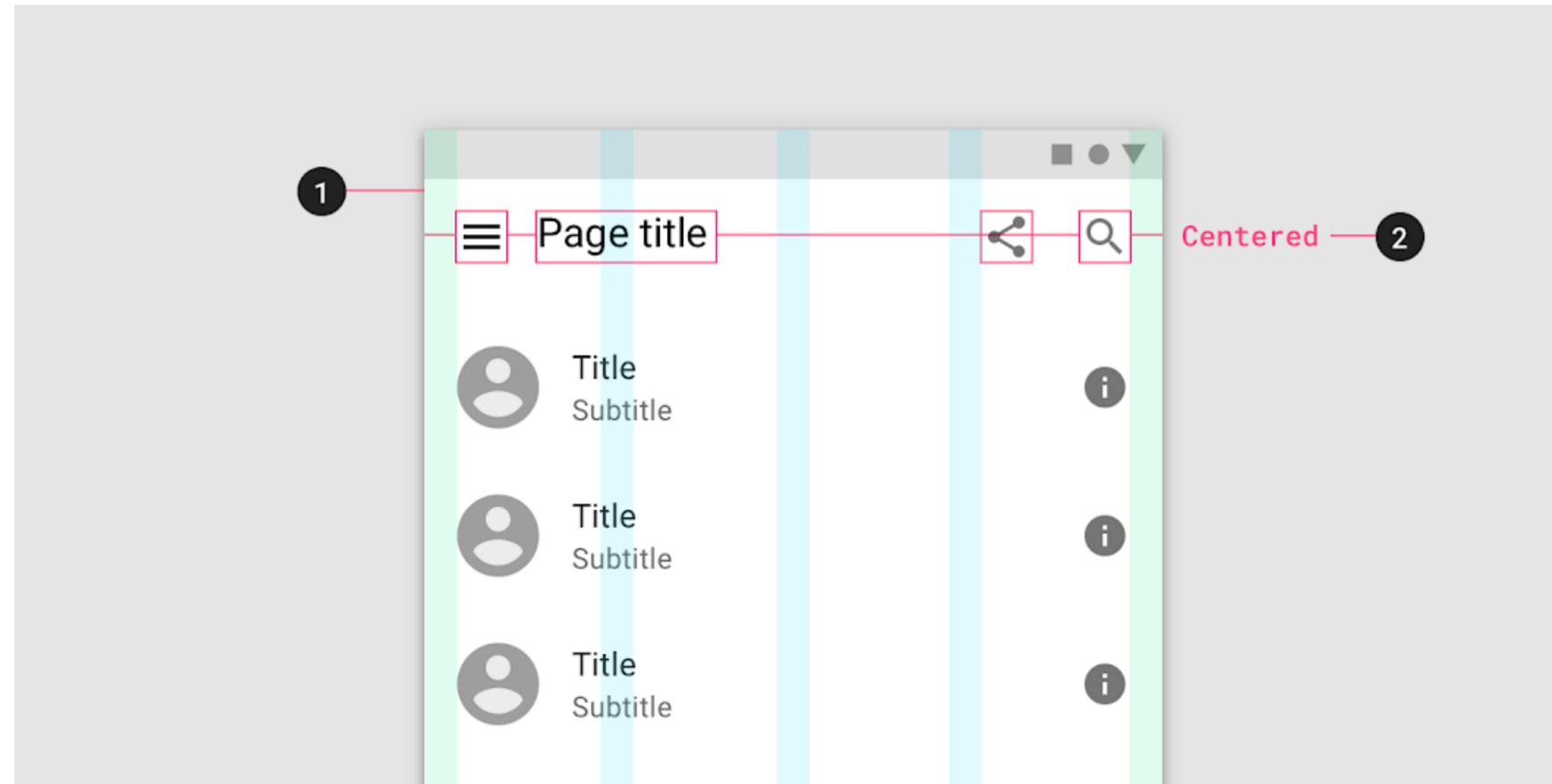
Padding refers to the space between UI elements. Padding is an alternative spacing method to keylines and is measured in increments of 8dp or 4dp.

Padding can be measured both vertically and horizontally



# Alignment

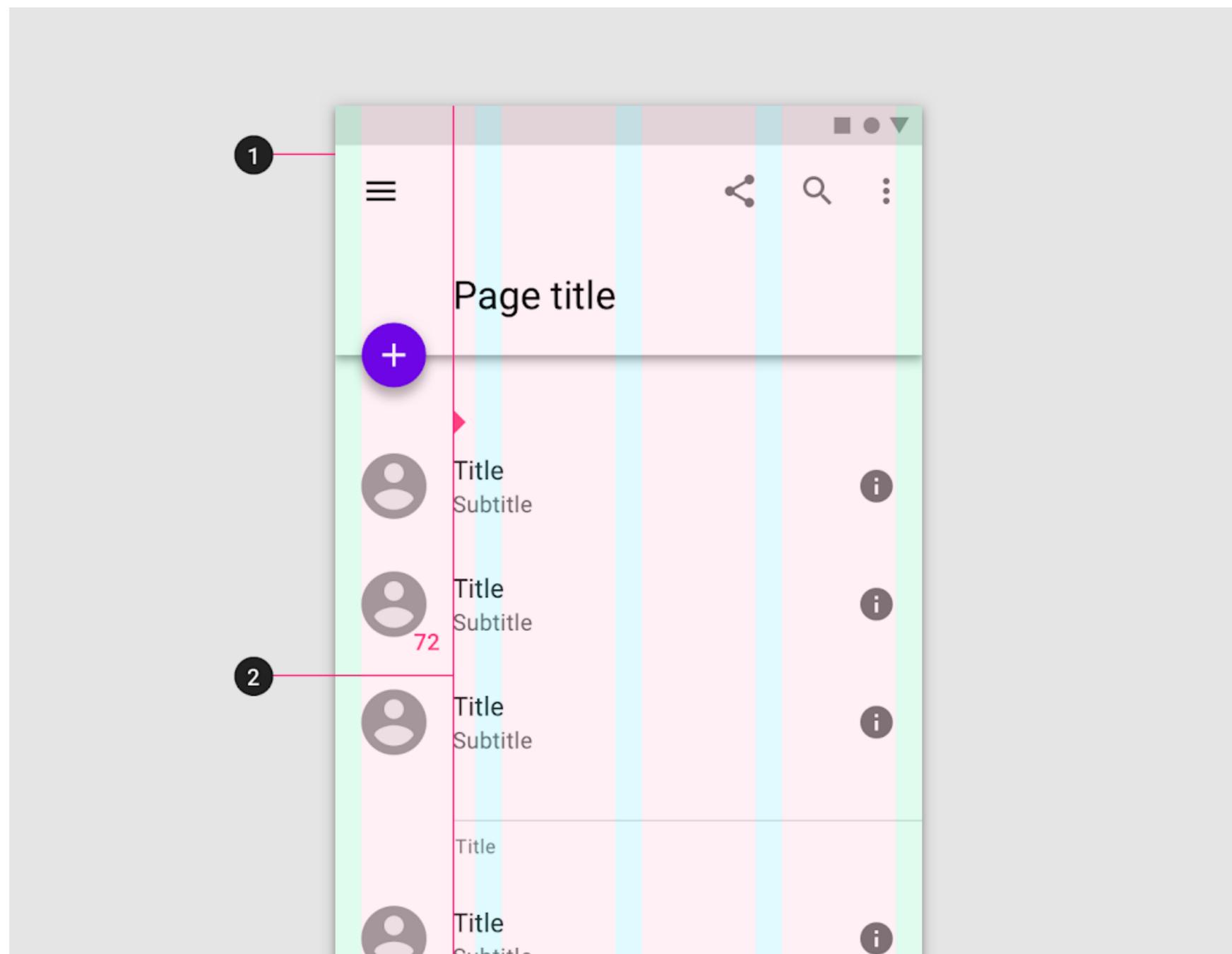
Alignment is the placement of elements within a component.



# Keylines

Keylines are an alignment tool that enables consistent placement of elements outside of the layout grid.

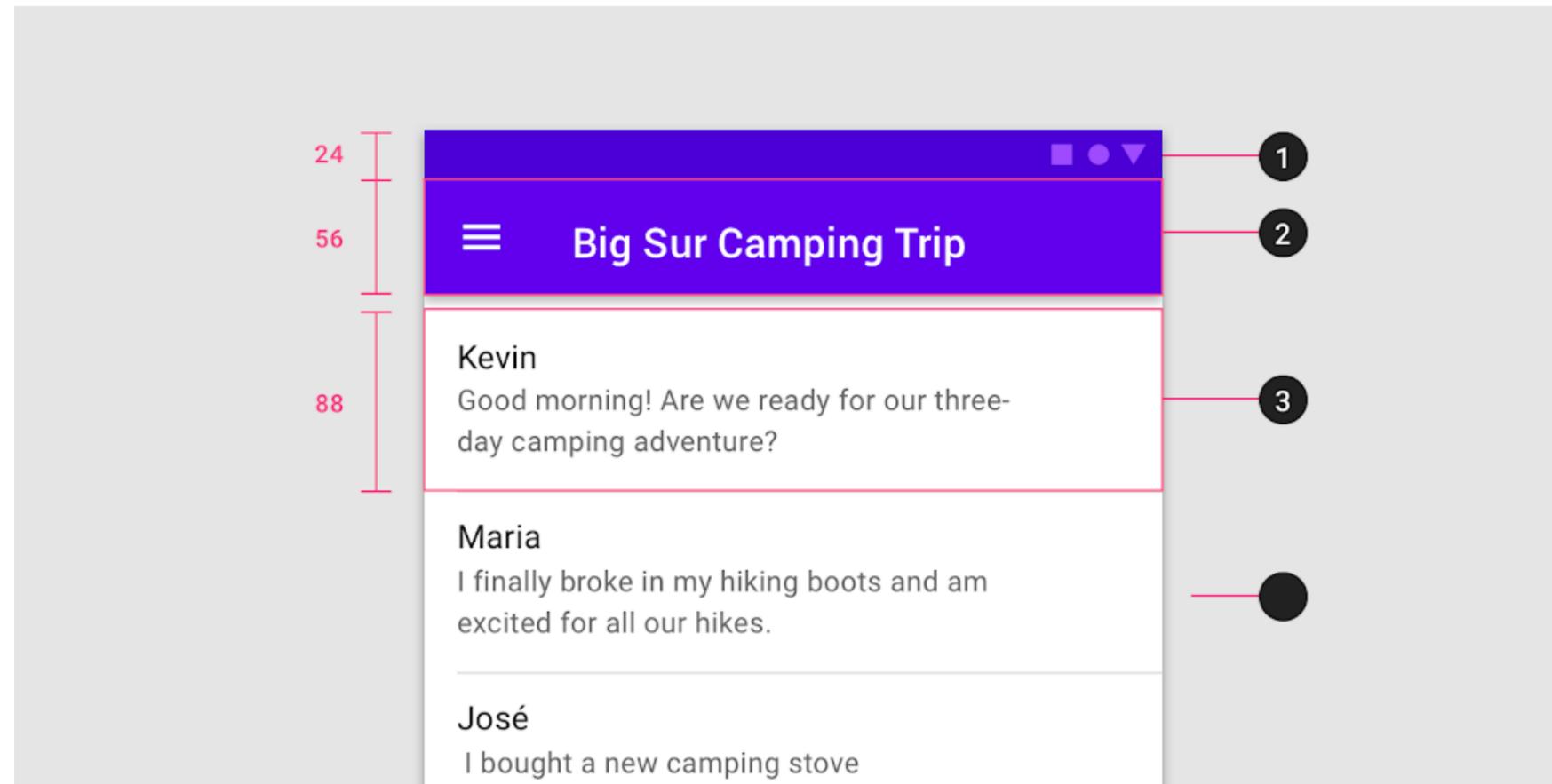
Keylines are determined by each element's distance from the edge of the screen and are measured in increments of 8dp.



# Dimensions

Dimensions refer to the width and height of component elements.

An app bar or list, only outline the height of an element.

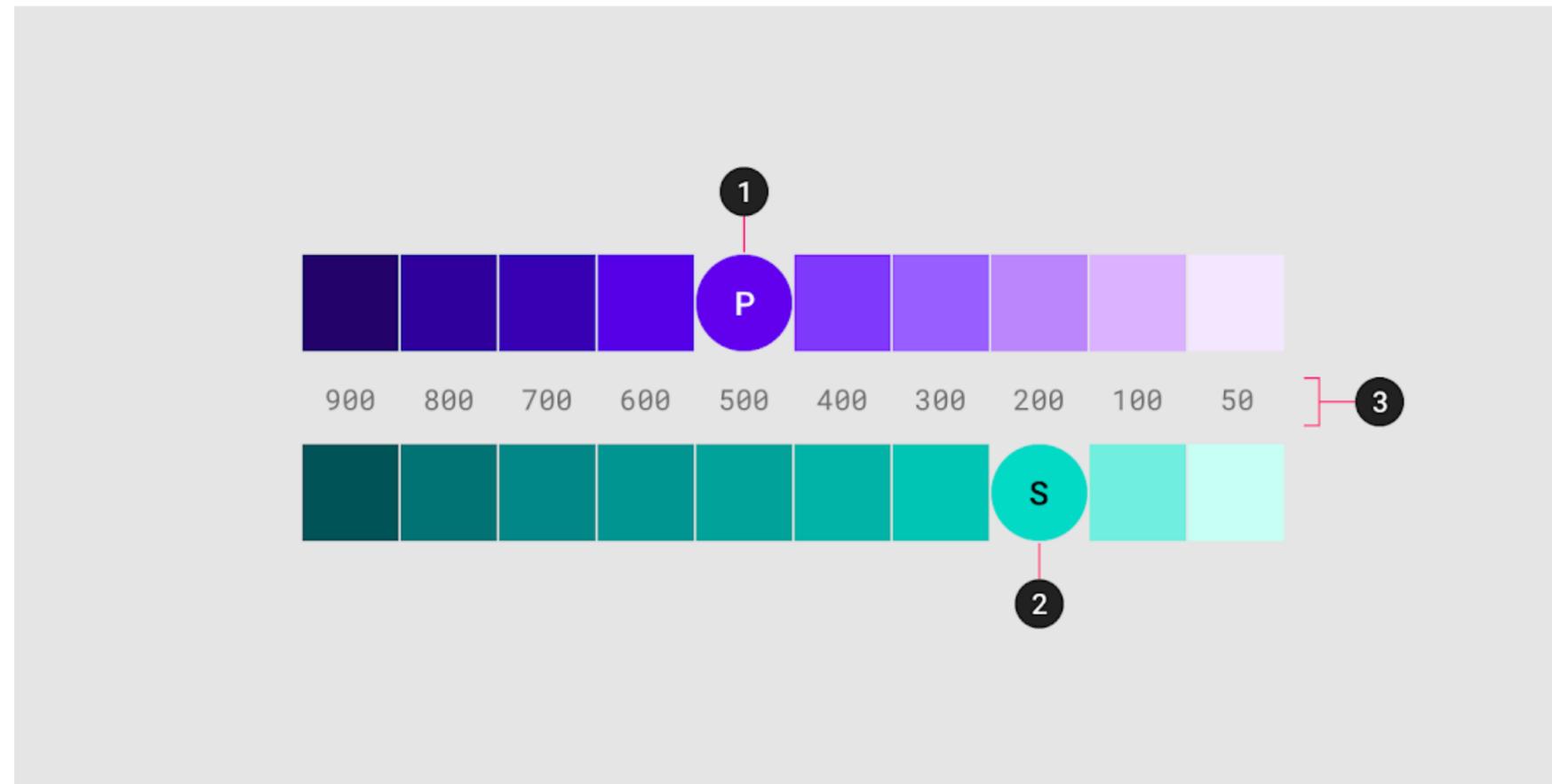


1. Status bar height: 24dp
2. App bar height: 56dp
3. List item height: 88dp

Colour

# Colour

Color themes are designed to be harmonious, ensure accessible text, and distinguish UI elements and surfaces from one another.

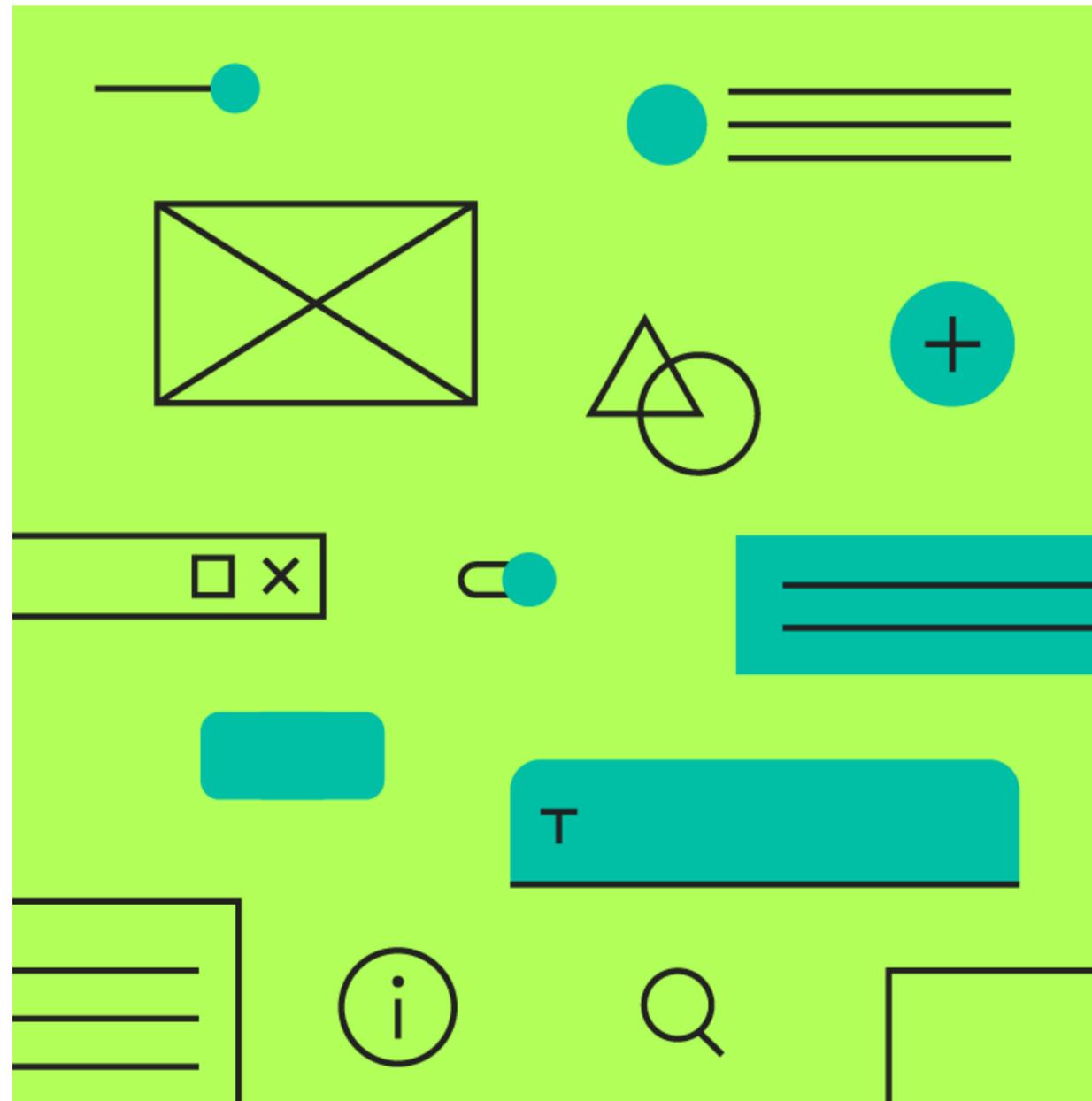


1. Primary color
2. Secondary color
3. Light and dark variants

# Colour Principles

## Hierarchical

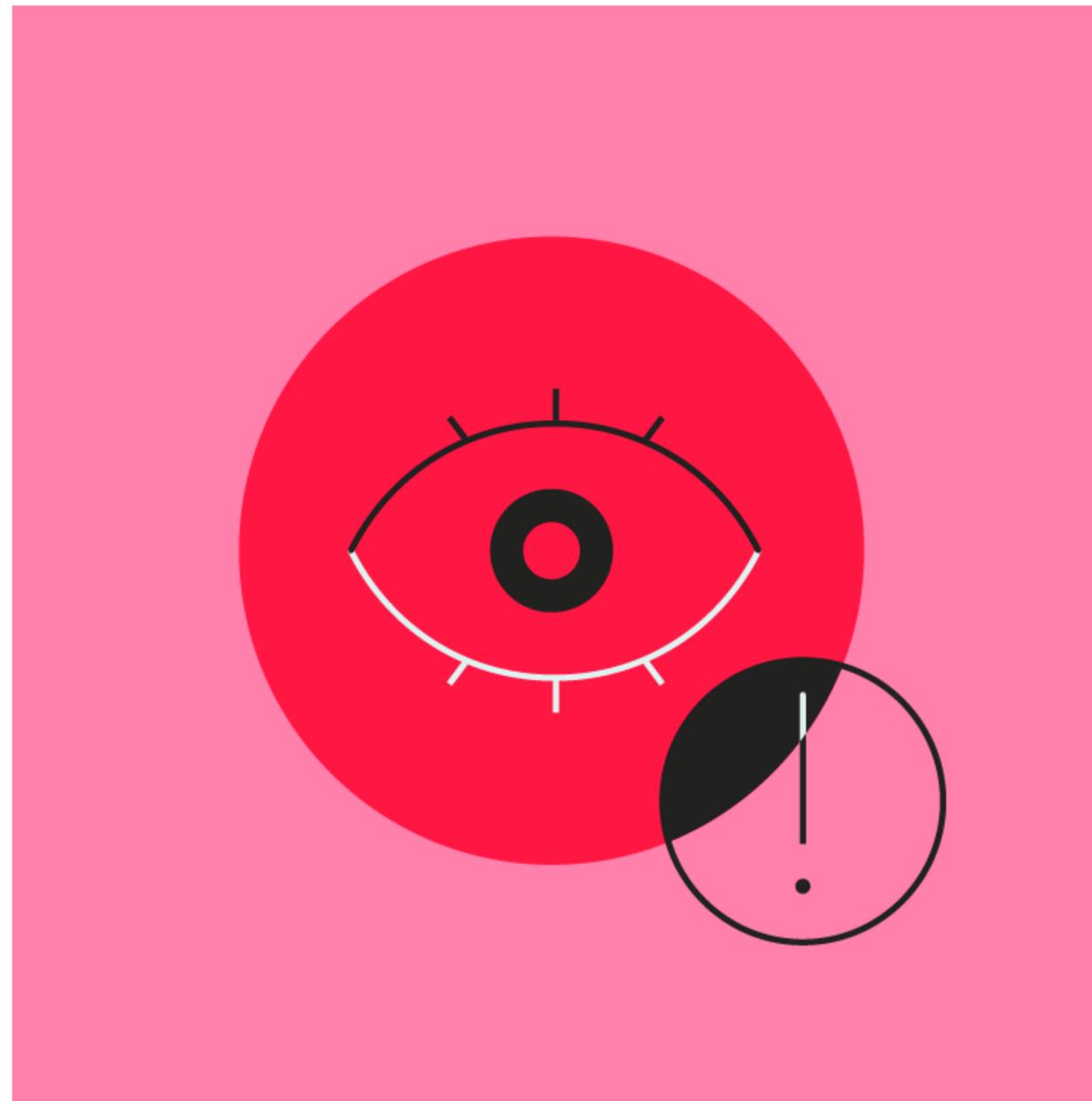
Colour indicates which elements are interactive, how they relate to other elements, and their level of prominence. Important elements should stand out the most.



# Colour Principles

## Legible

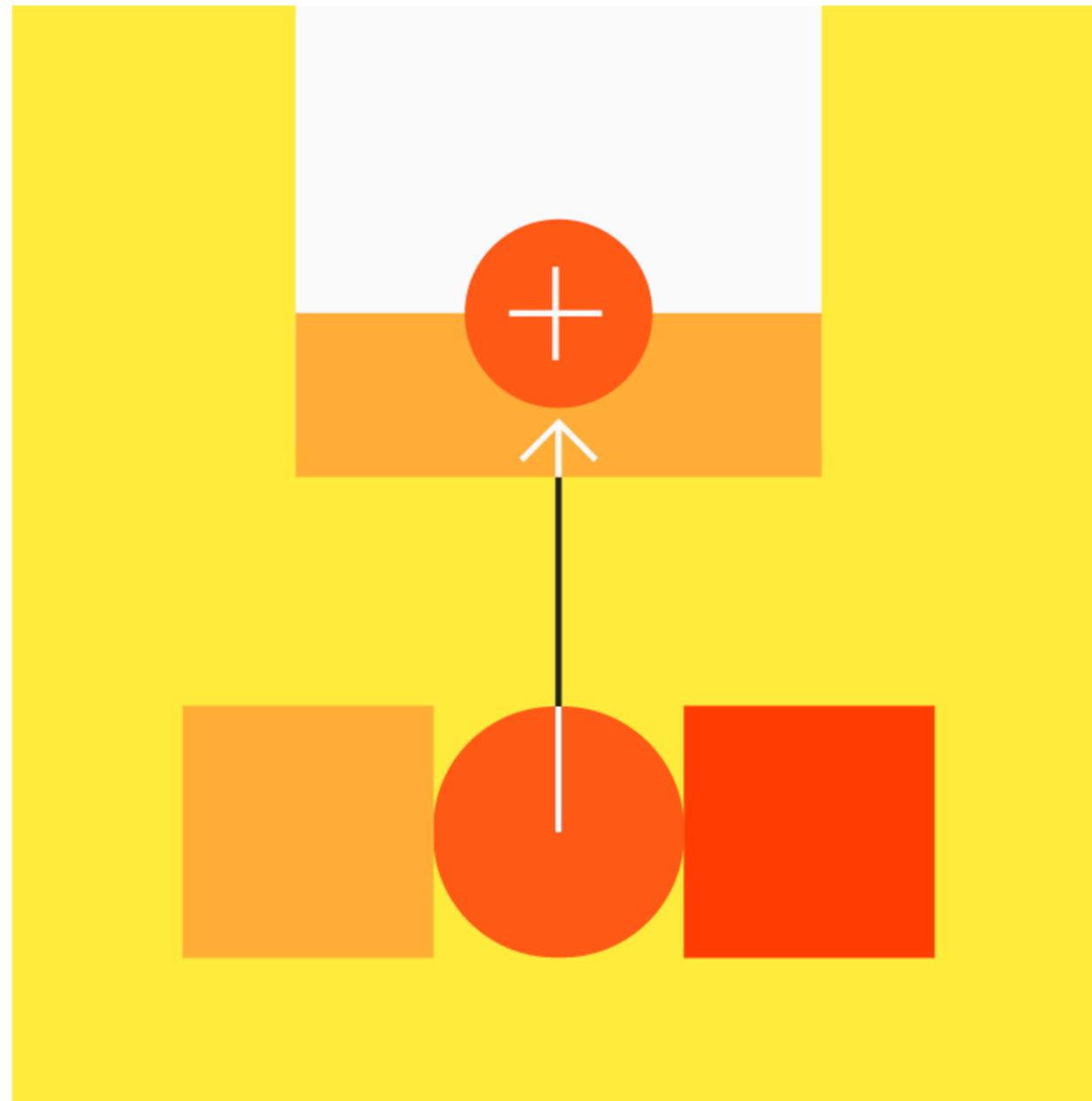
Text and important elements, like icons, should meet legibility standards when appearing on coloured backgrounds.



# Colour Principles

## Expressive

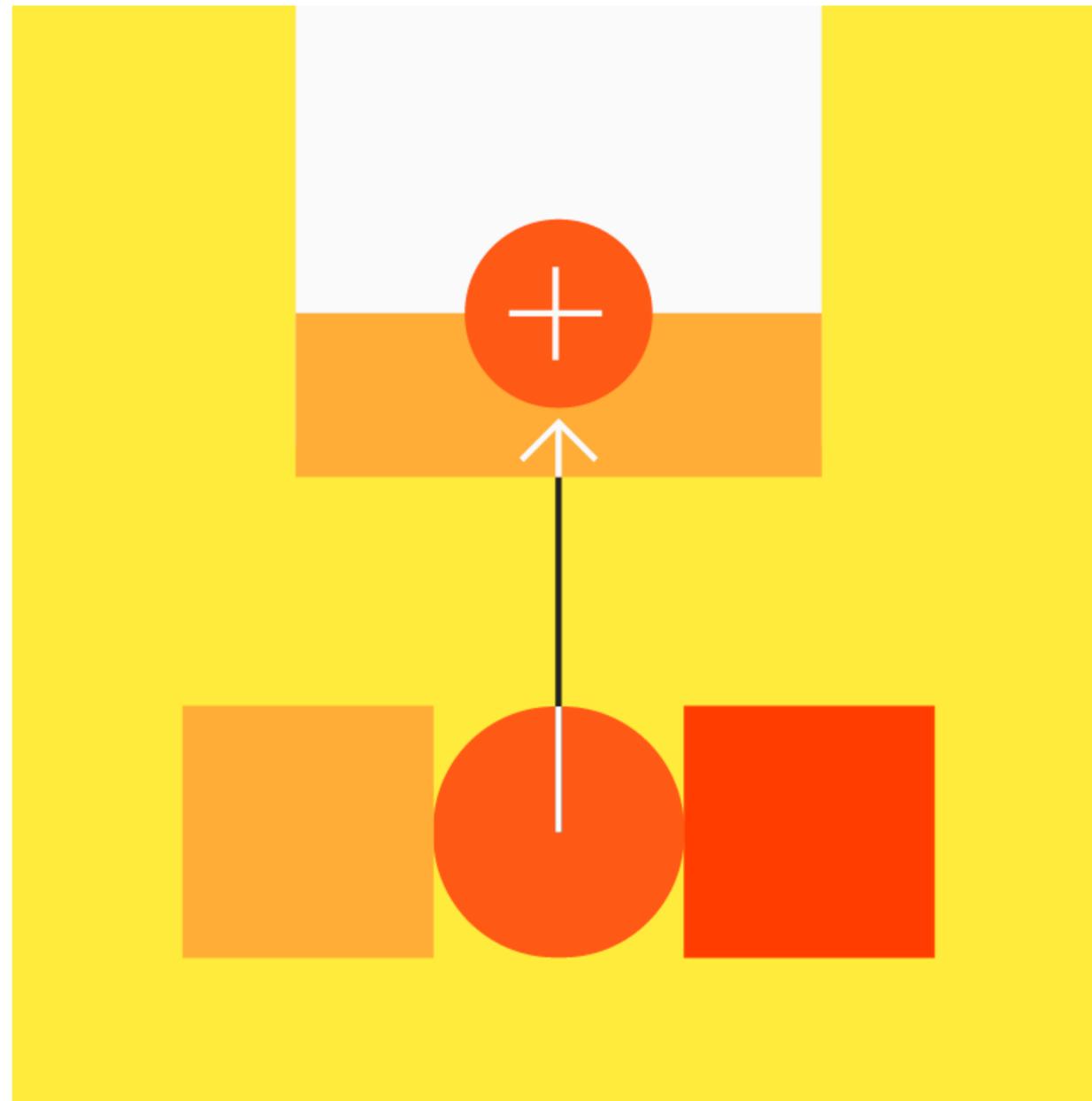
Show brand colors at memorable moments that reinforce your brand's style.



# Colour Principles

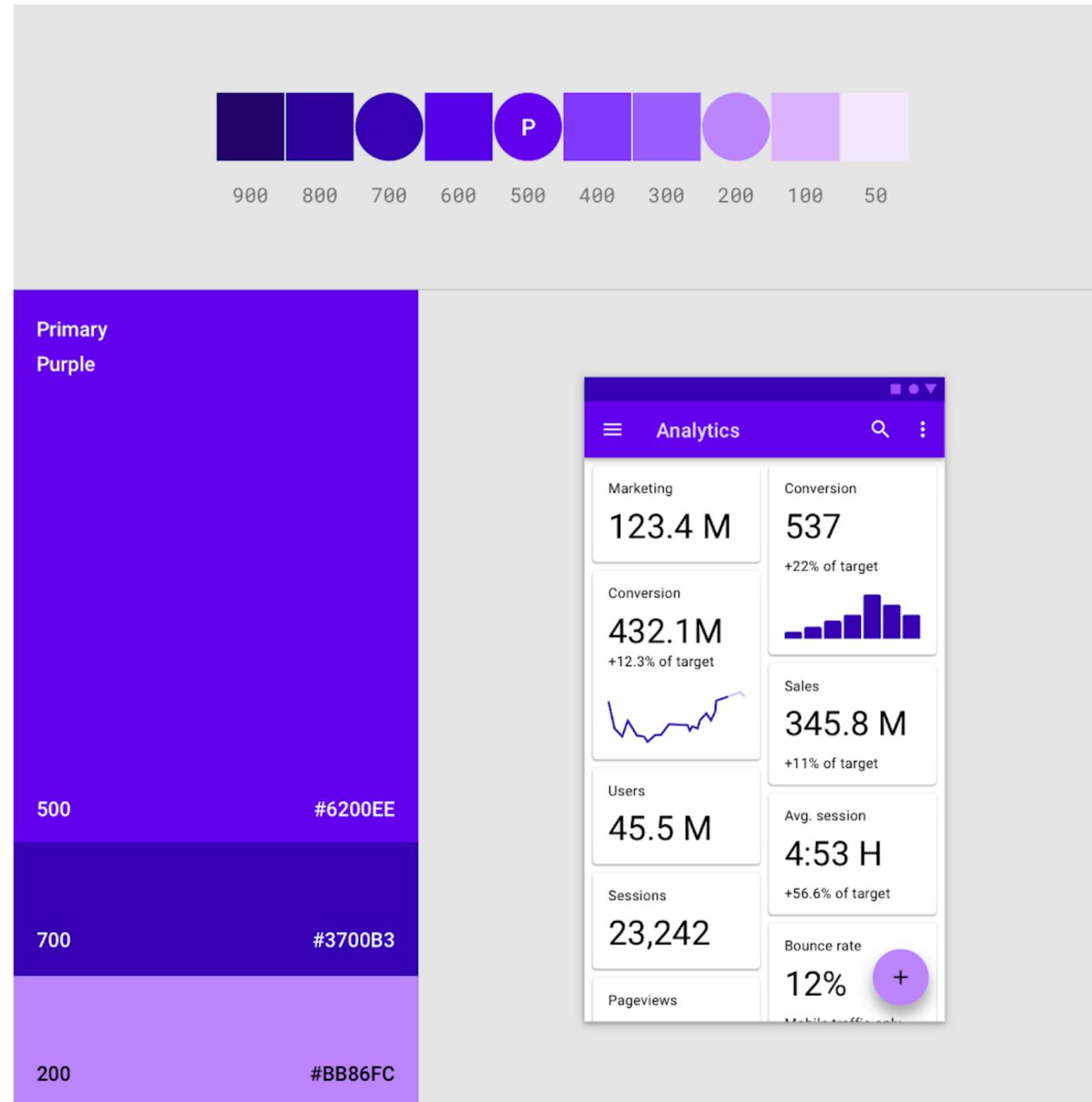
## Expressive

Show brand colors at memorable moments that reinforce your brand's style.



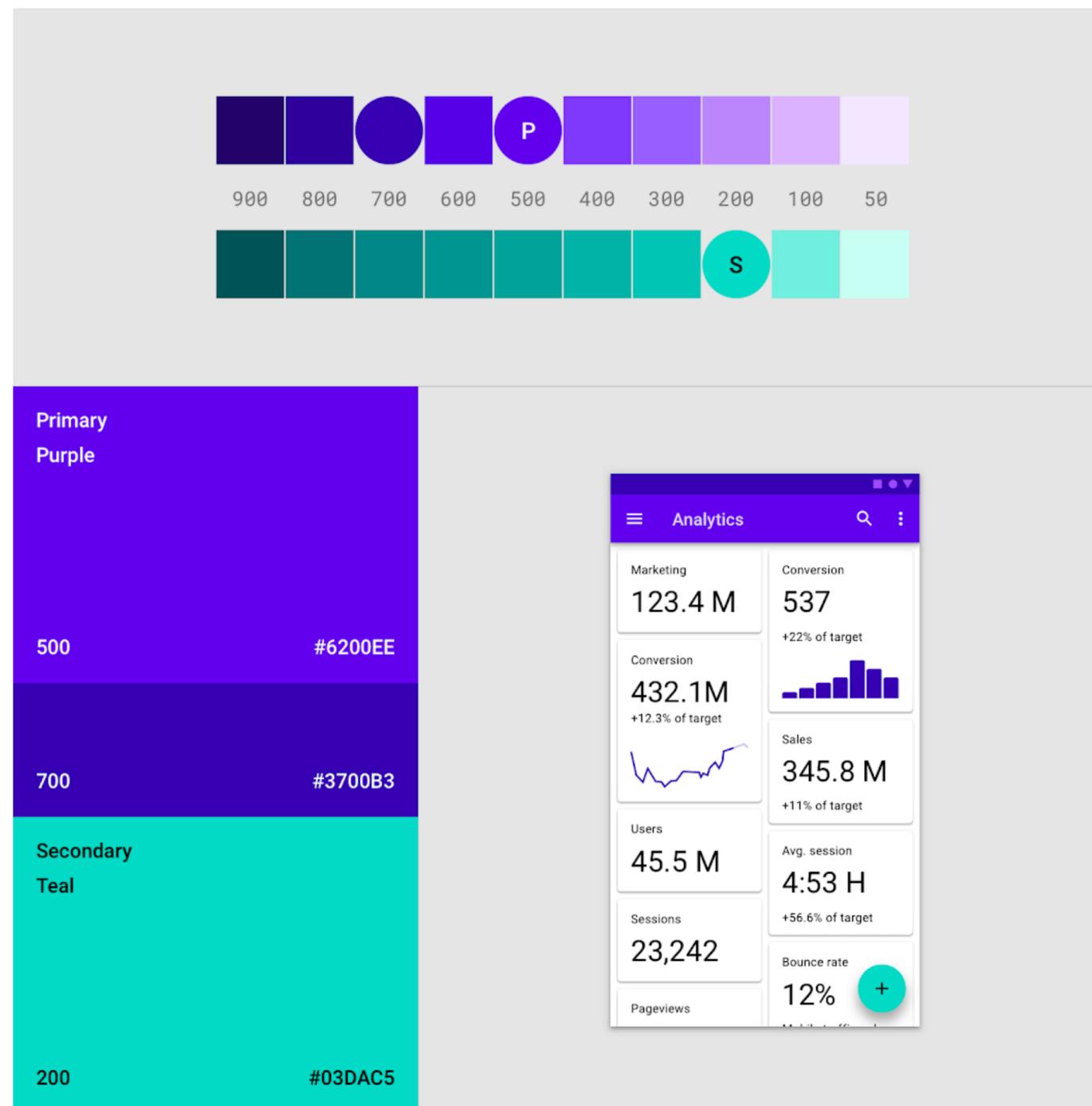
# Primary Colour

A primary color is the color displayed most frequently across your app's screens and components.



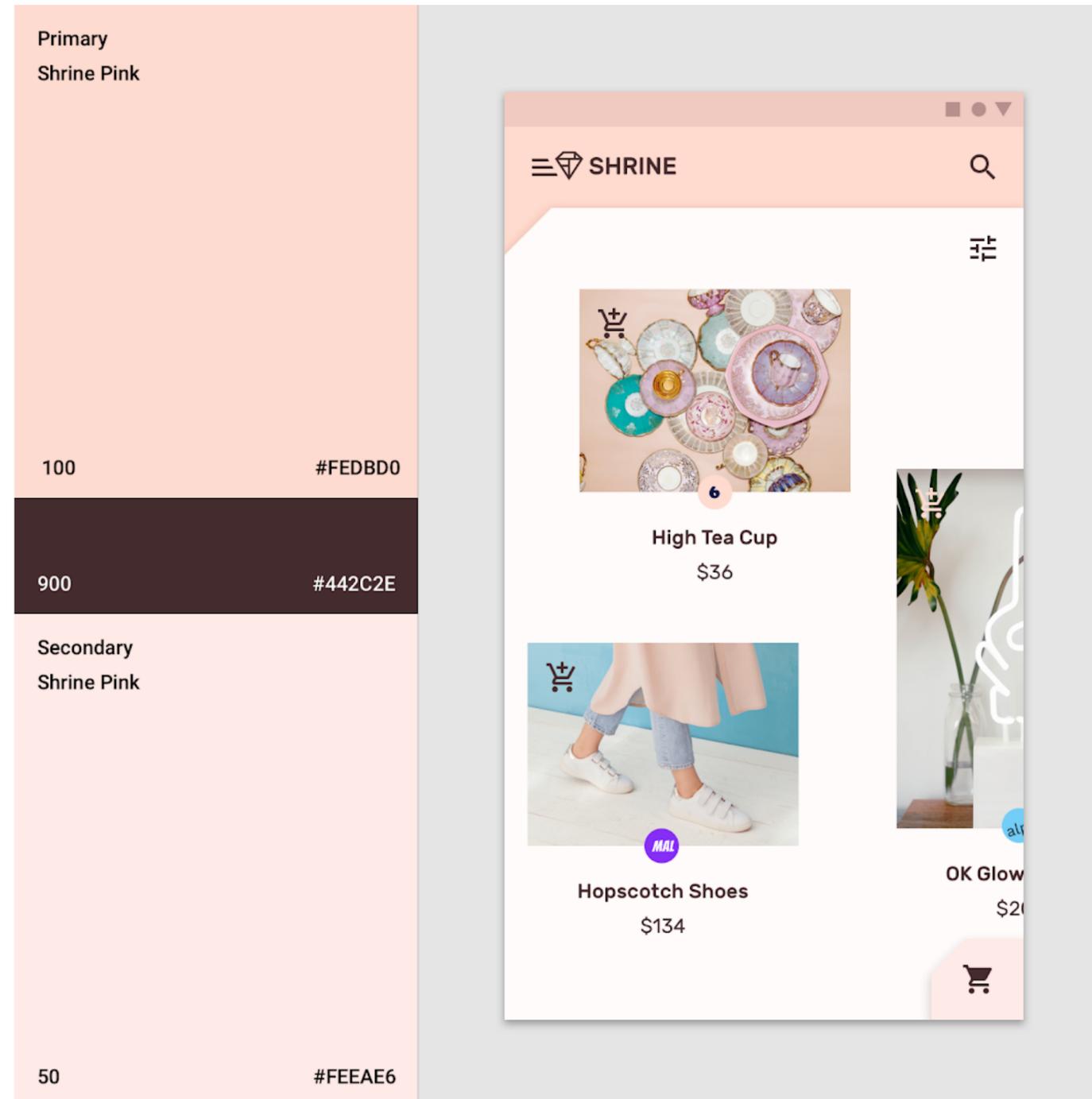
# Secondary Colour

A secondary color provides more ways to accent and distinguish your product. Having a secondary color is optional, and should be applied sparingly to accent select parts of your UI.



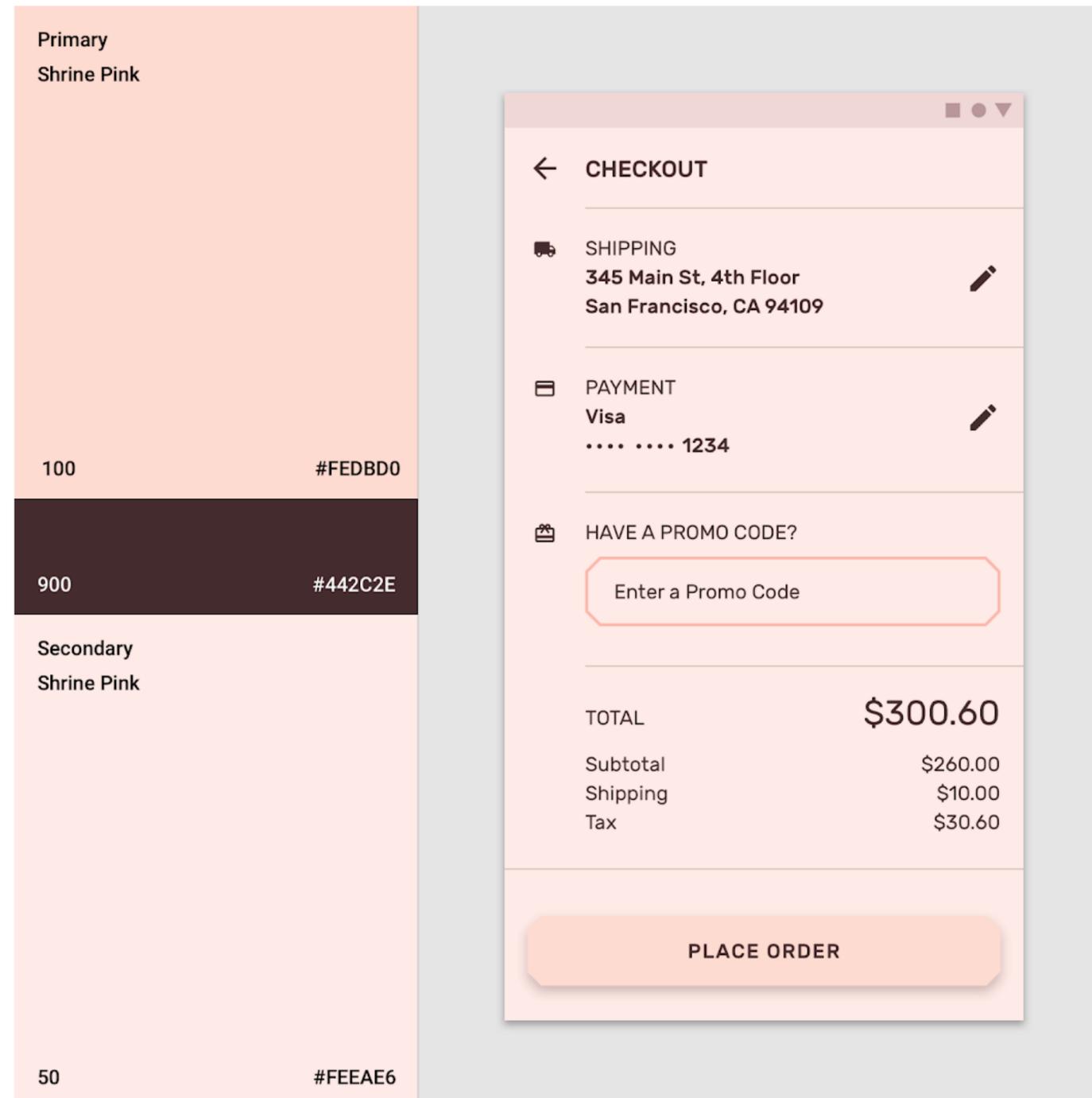
# Colour in the Application

Secondary colour for expanding sheet on the front layer.



# Colour in the Application

Primary dark variant colour for icons and typeface.



# Colour in the Application

Primary and secondary colour for icons.

**Primary**  
Basil Green

800 #356859

500 #37966F

100 #B9E4C9

**Secondary**  
Basil Orange

800 #FD5523

50 #FFFBE6

## Creamy Pesto Pasta

Guilt-free gluten-free spaghetti pasta is sautéed in a garlic, kale pesto. It's an easy and healthy dinner.

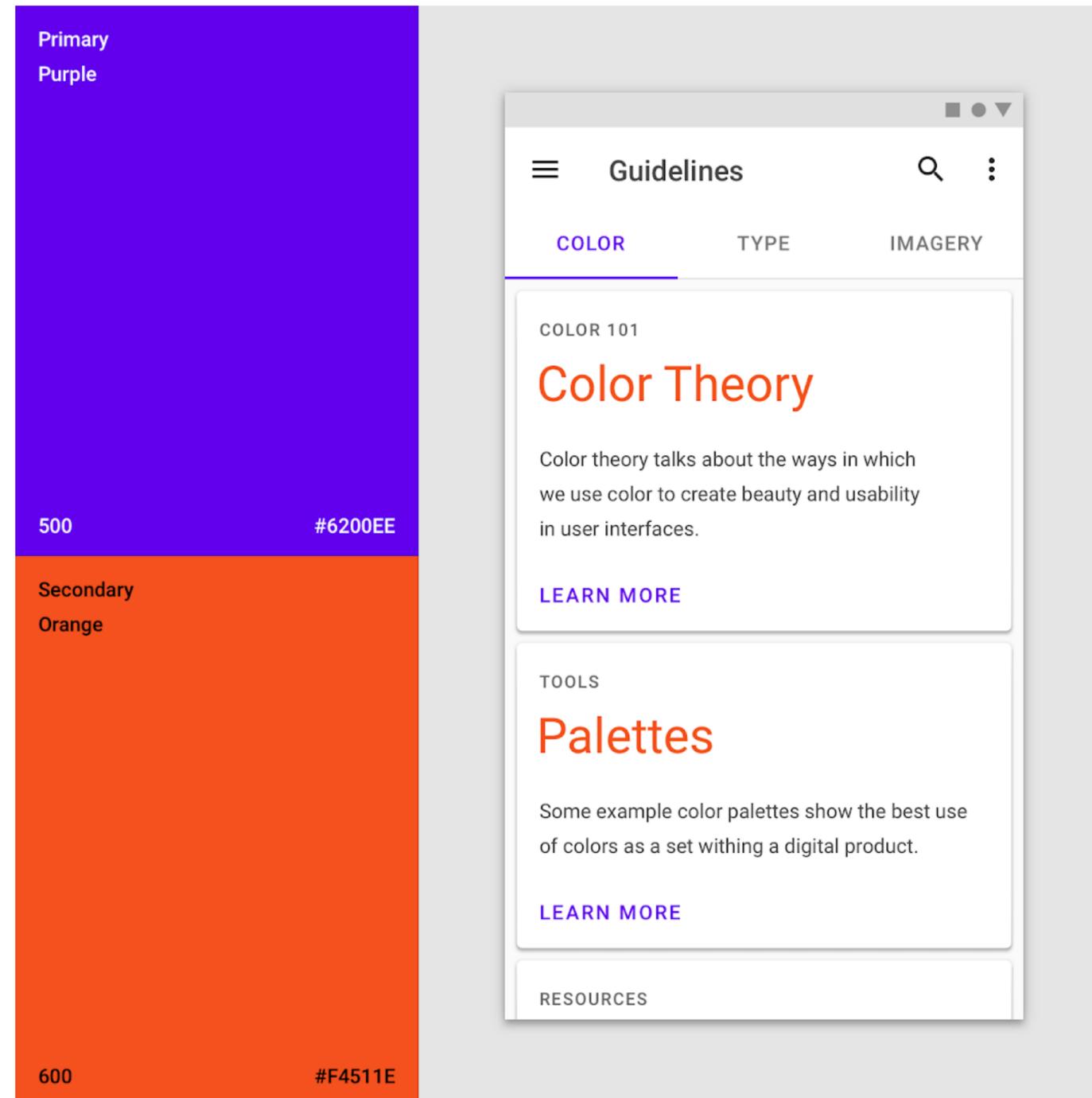
Calories	Protein	Fat
465g	27g	12g

Gluten-free Egg Free

INGREDIENTS DIRECTIONS

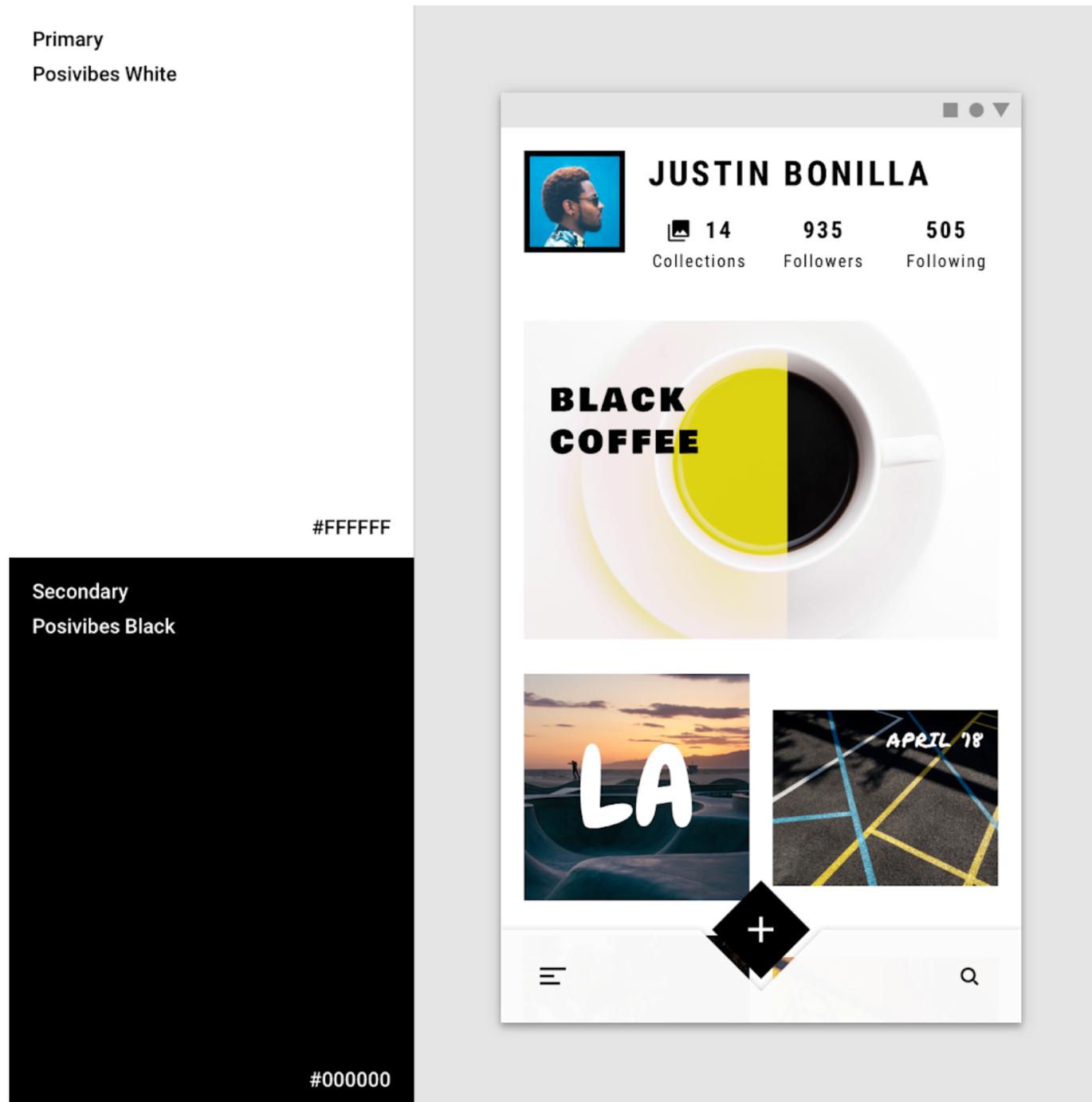
# Colour in the Application

Orange accents the card's headlines, and purple appears on tabs and buttons.



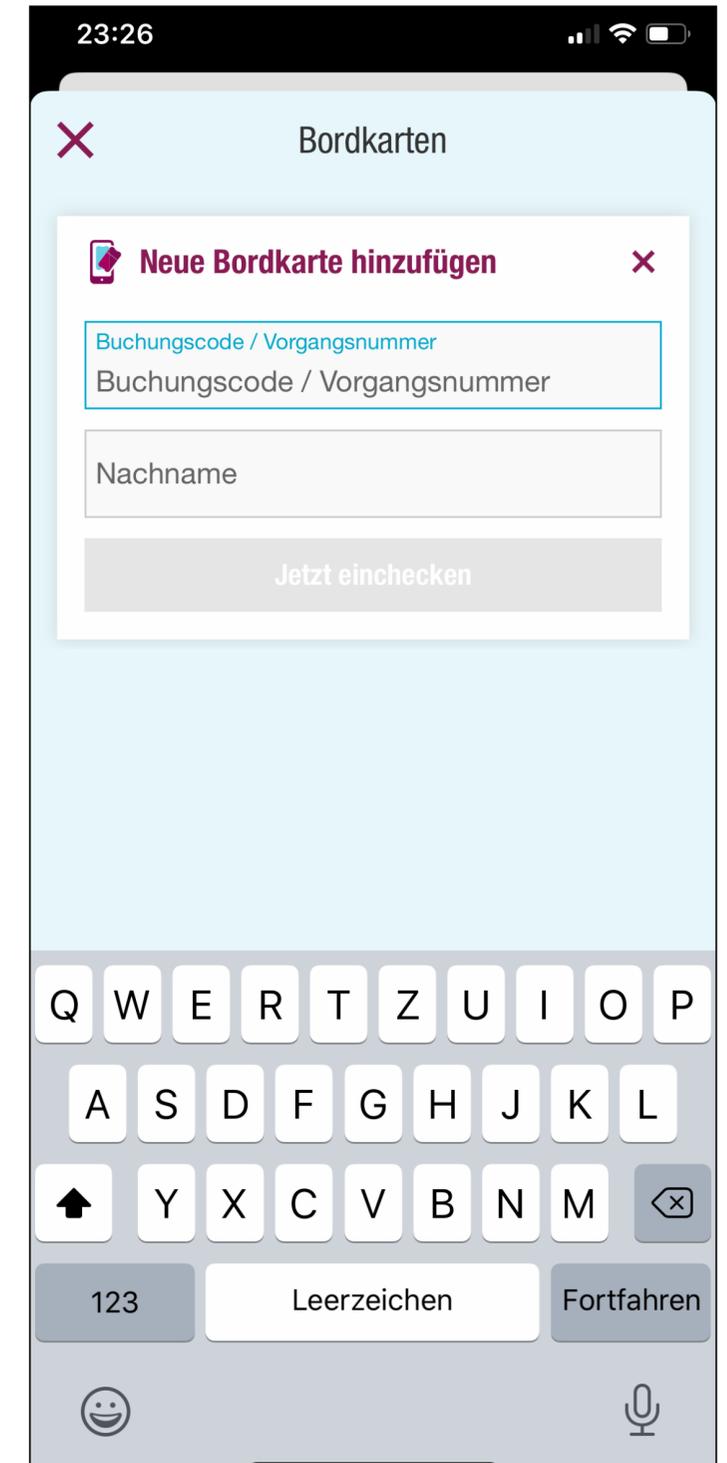
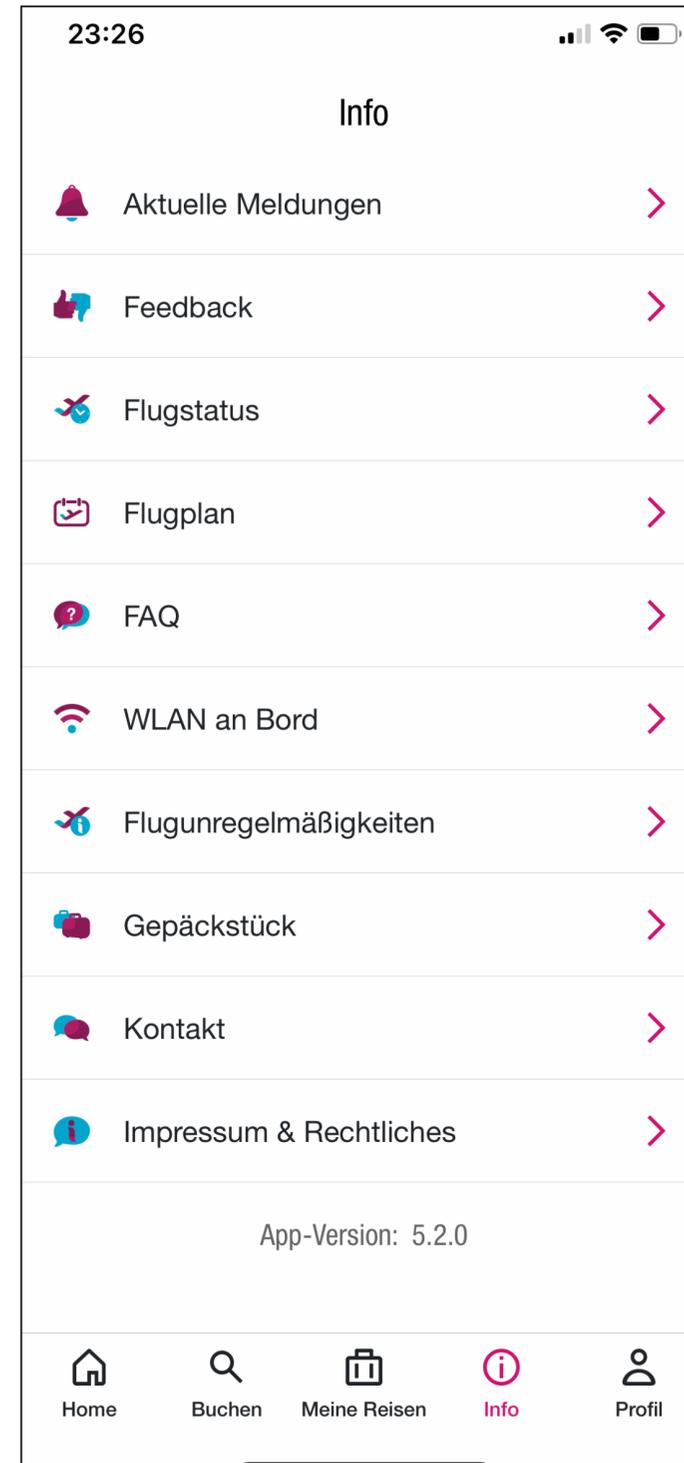
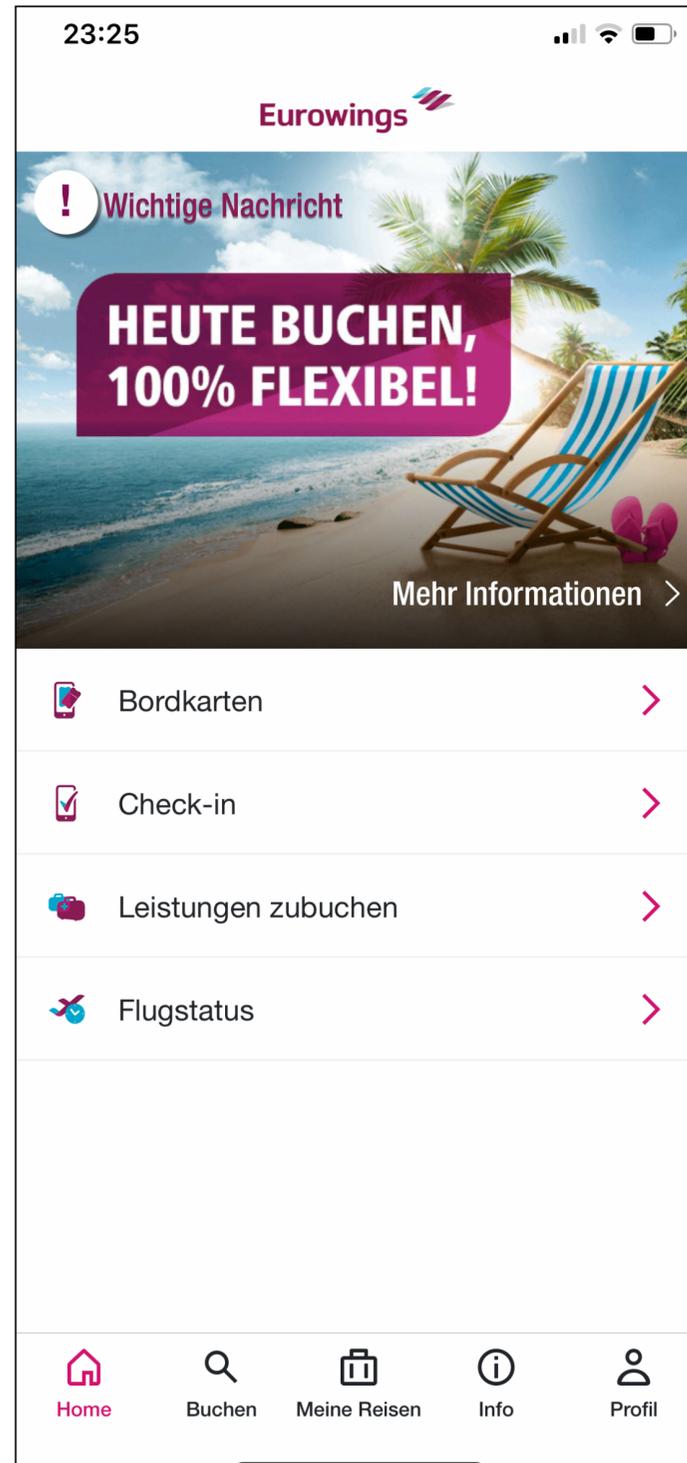
# Colour in the Application

a primary white and a secondary black for all buttons, selection controls, and iconography. These components stand out because they contrast with the vivid, multicolor content.



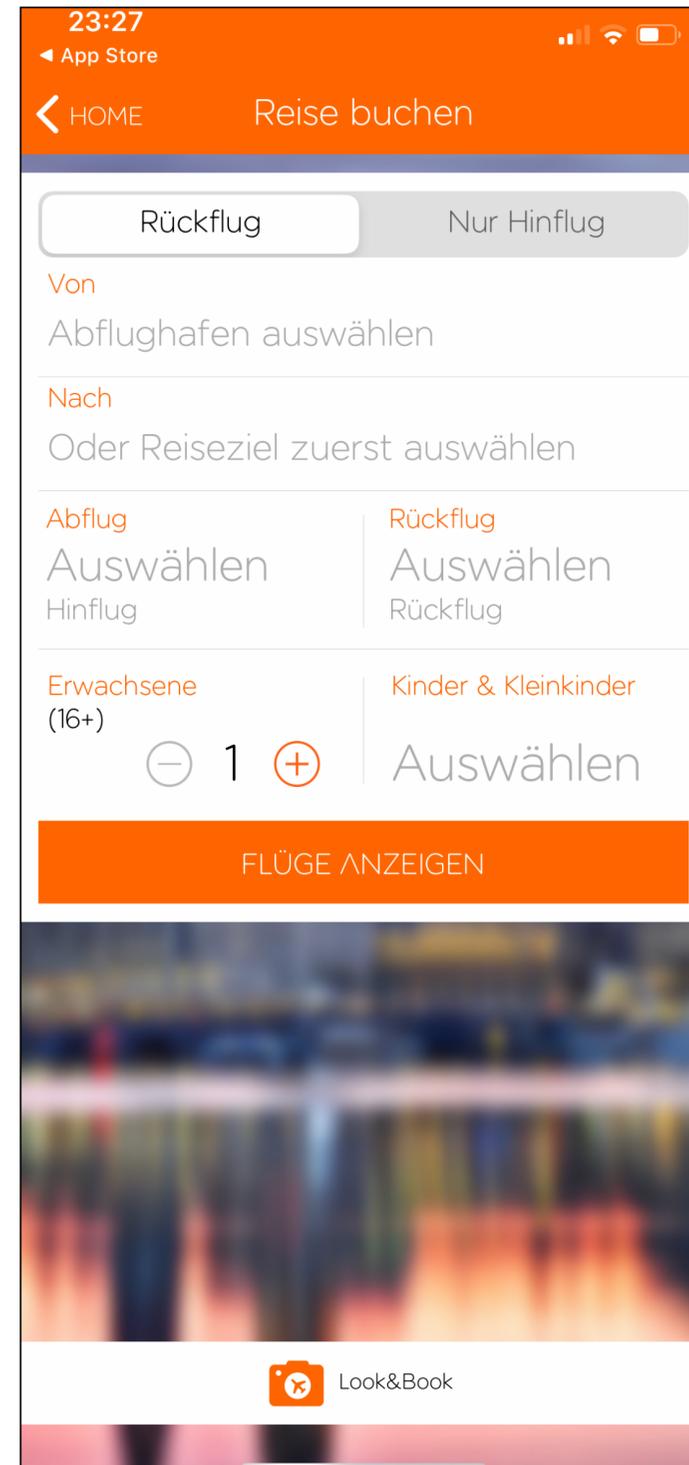
# Colour system

Eurowings



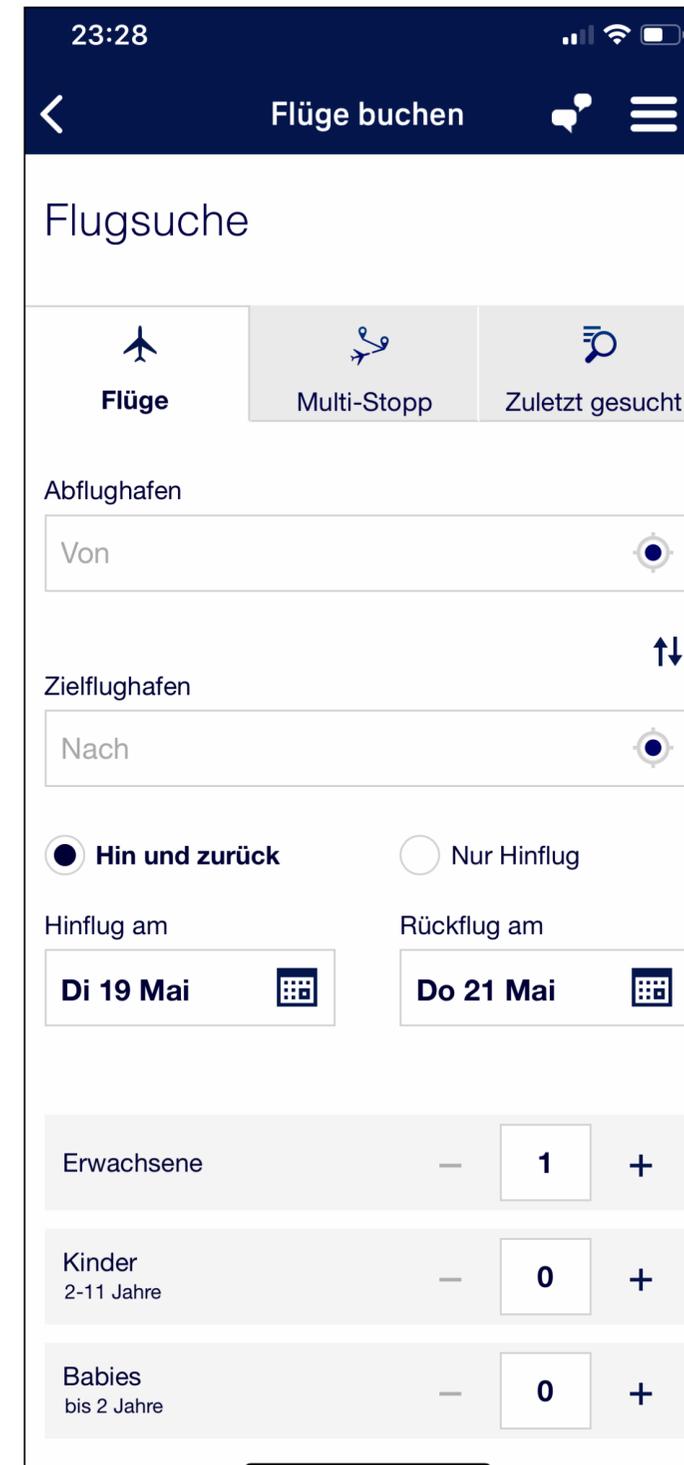
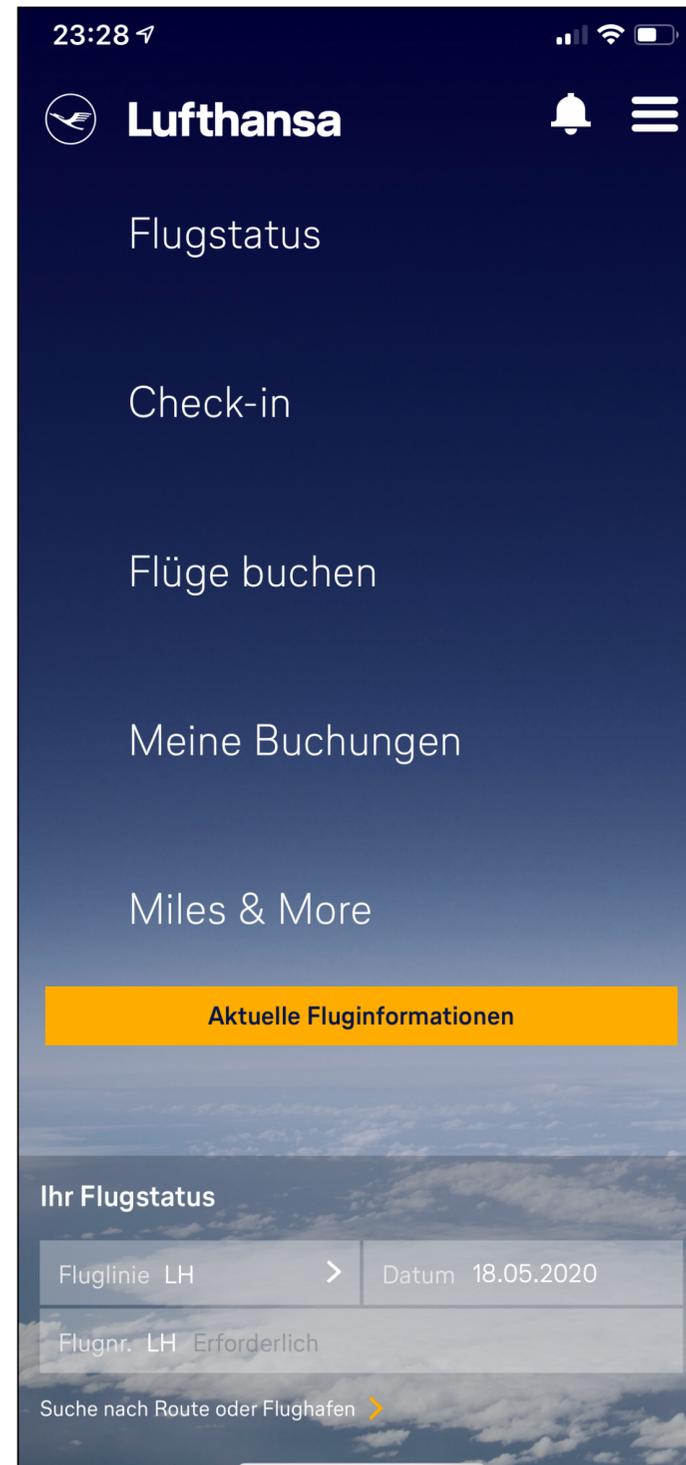
# Colour system

Easyjet



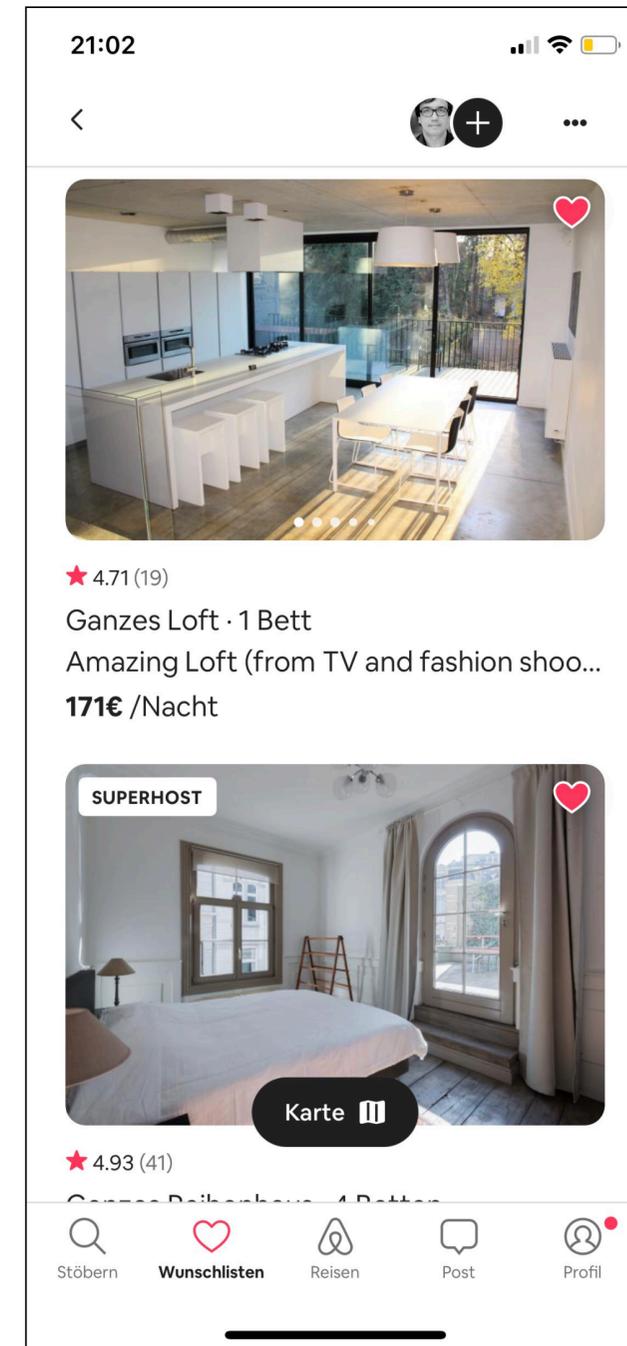
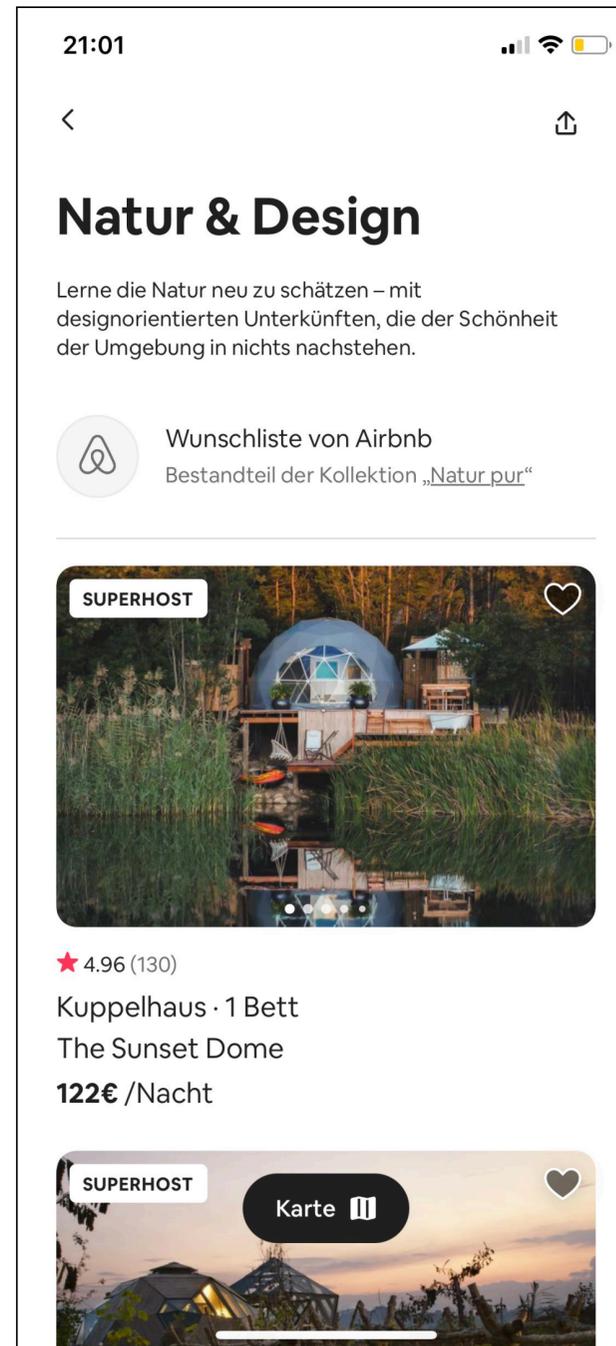
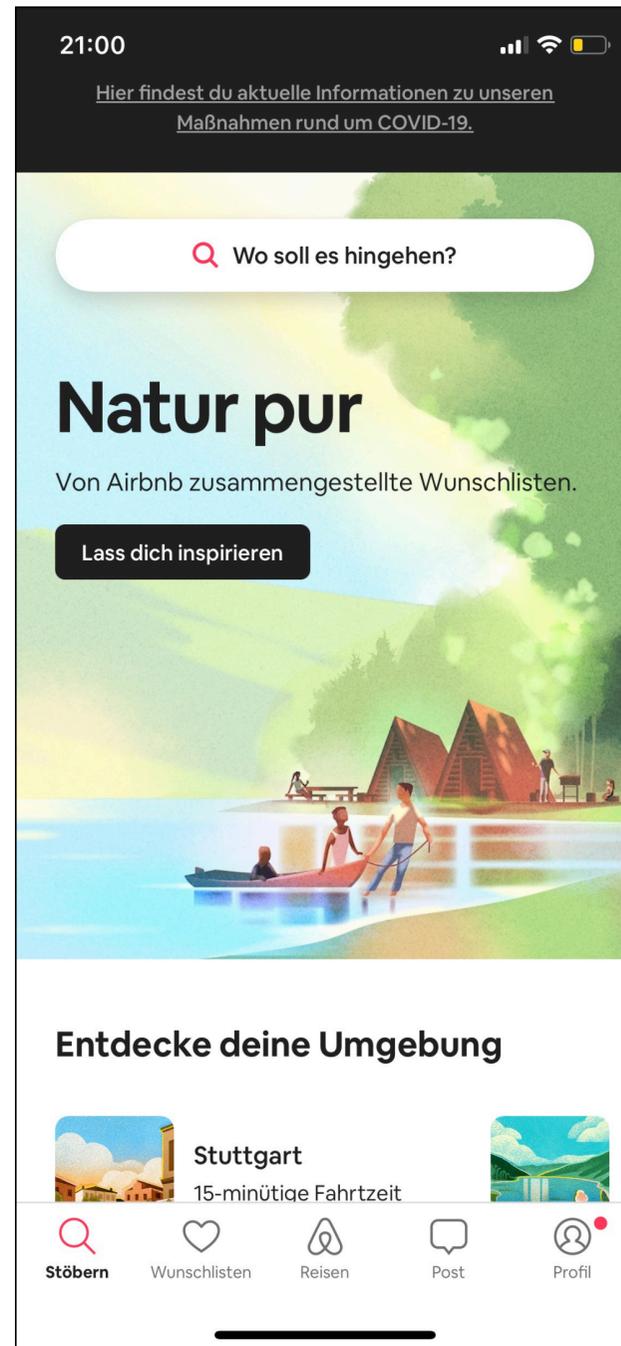
# Color system

Lufthansa



# Color system

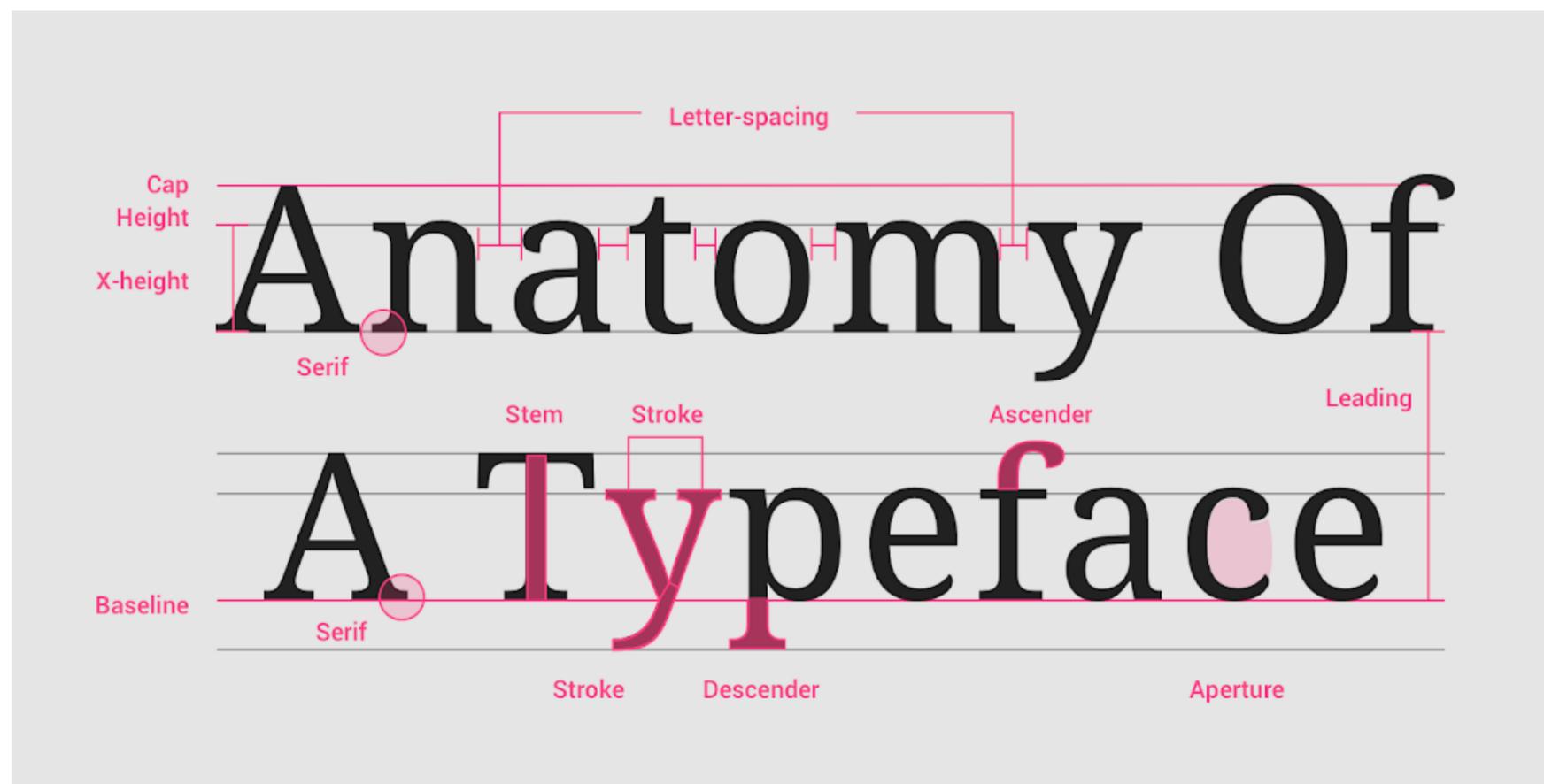
airbnb



# Typography

# Typography

Use typography to present your design and content as clearly and efficiently as possible.



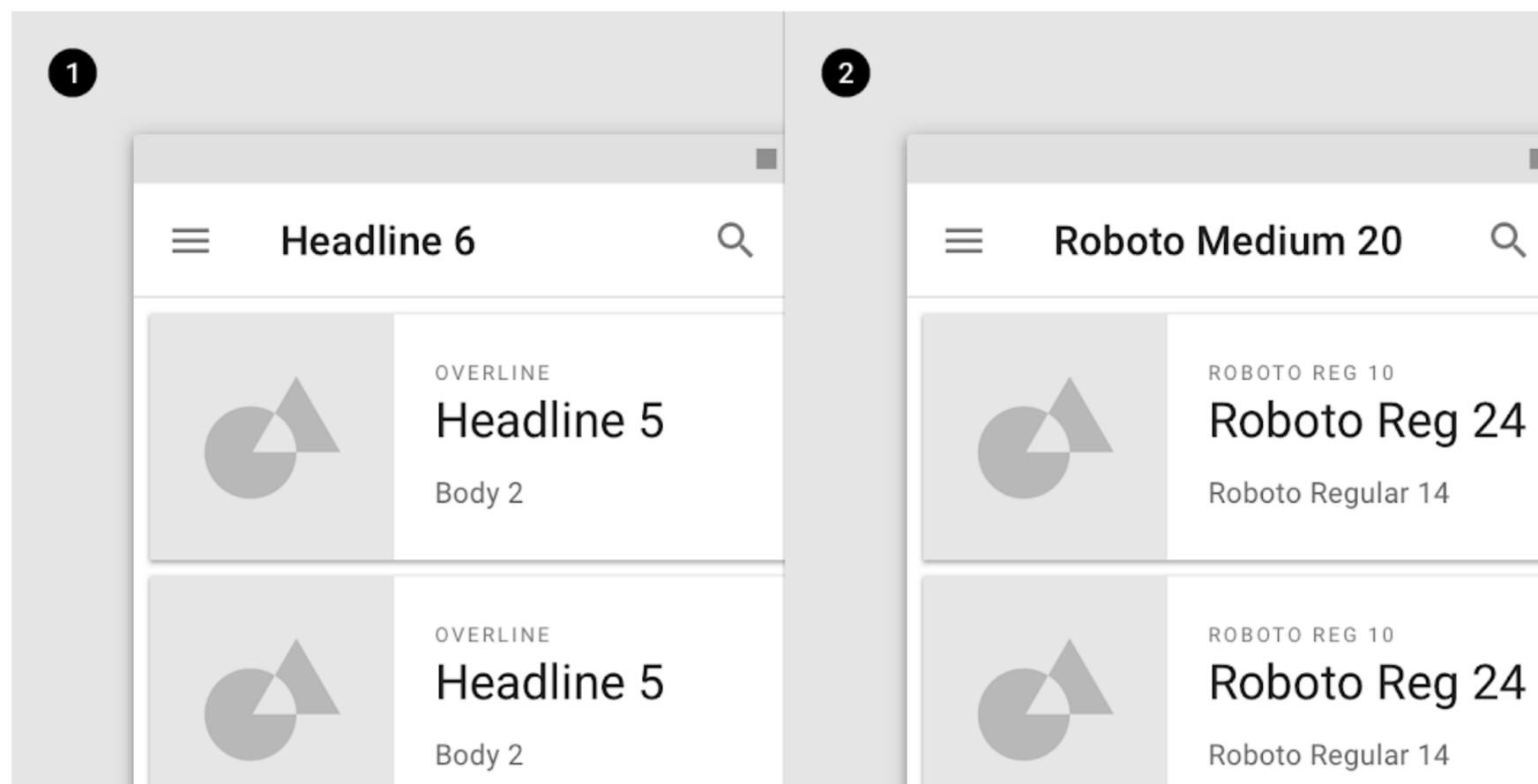
# Typography

This example type scale uses the Roboto typeface for all headlines, subtitles, body, and captions, creating a cohesive typography experience. Hierarchy is communicated through differences in font weight (Light, Medium, Regular), size, letter spacing, and case.

Scale Category	Typeface	Weight	Size	Case	Letter spacing
H1	Roboto	Light	96	Sentence	-1.5
H2	Roboto	Light	60	Sentence	-0.5
H3	Roboto	Regular	48	Sentence	0
H4	Roboto	Regular	34	Sentence	0.25
H5	Roboto	Regular	24	Sentence	0
H6	Roboto	Medium	20	Sentence	0.15
Subtitle 1	Roboto	Regular	16	Sentence	0.15
Subtitle 2	Roboto	Medium	14	Sentence	0.1
Body 1	Roboto	Regular	16	Sentence	0.5
Body 2	Roboto	Regular	14	Sentence	0.25
BUTTON	Roboto	Medium	14	All caps	1.25
Caption	Roboto	Regular	12	Sentence	0.4
OVERLINE	Roboto	Regular	10	All caps	1.5

# Typography

The type scale appears as text in components and the overall layout. Type attributes can use custom values for the typeface, font, case, size, and letter spacing.

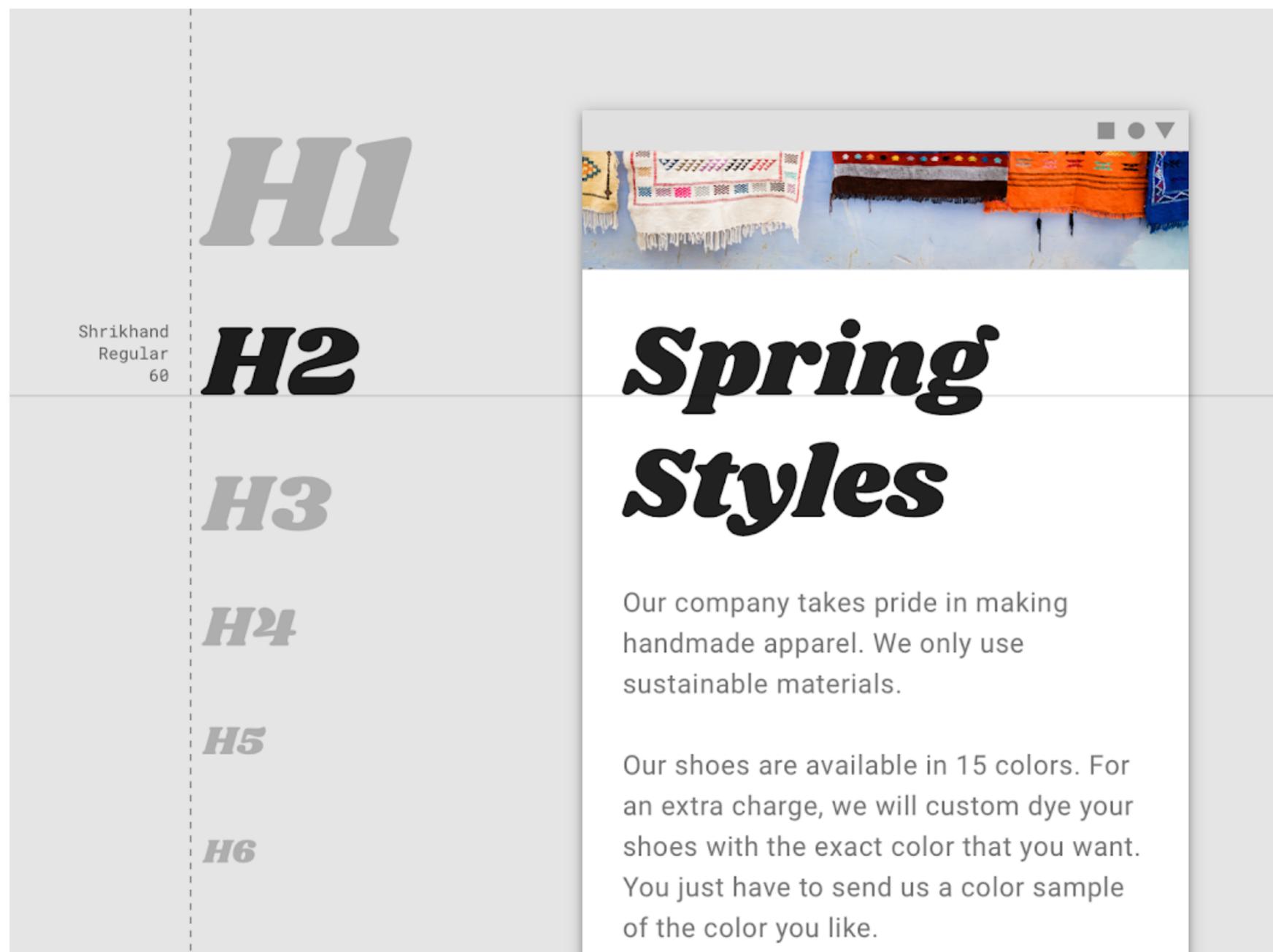


1. Scale categories
2. Actual values

# Typography

## Headline

In the type scale, headlines span from a range of 1 through 6. Headlines are the largest text on the screen, reserved for short, important text or numerals.



# Typography

## Headline

Petit Formal  
Script  
Regular  
48

H1

H2

H3

H4

H5

H6



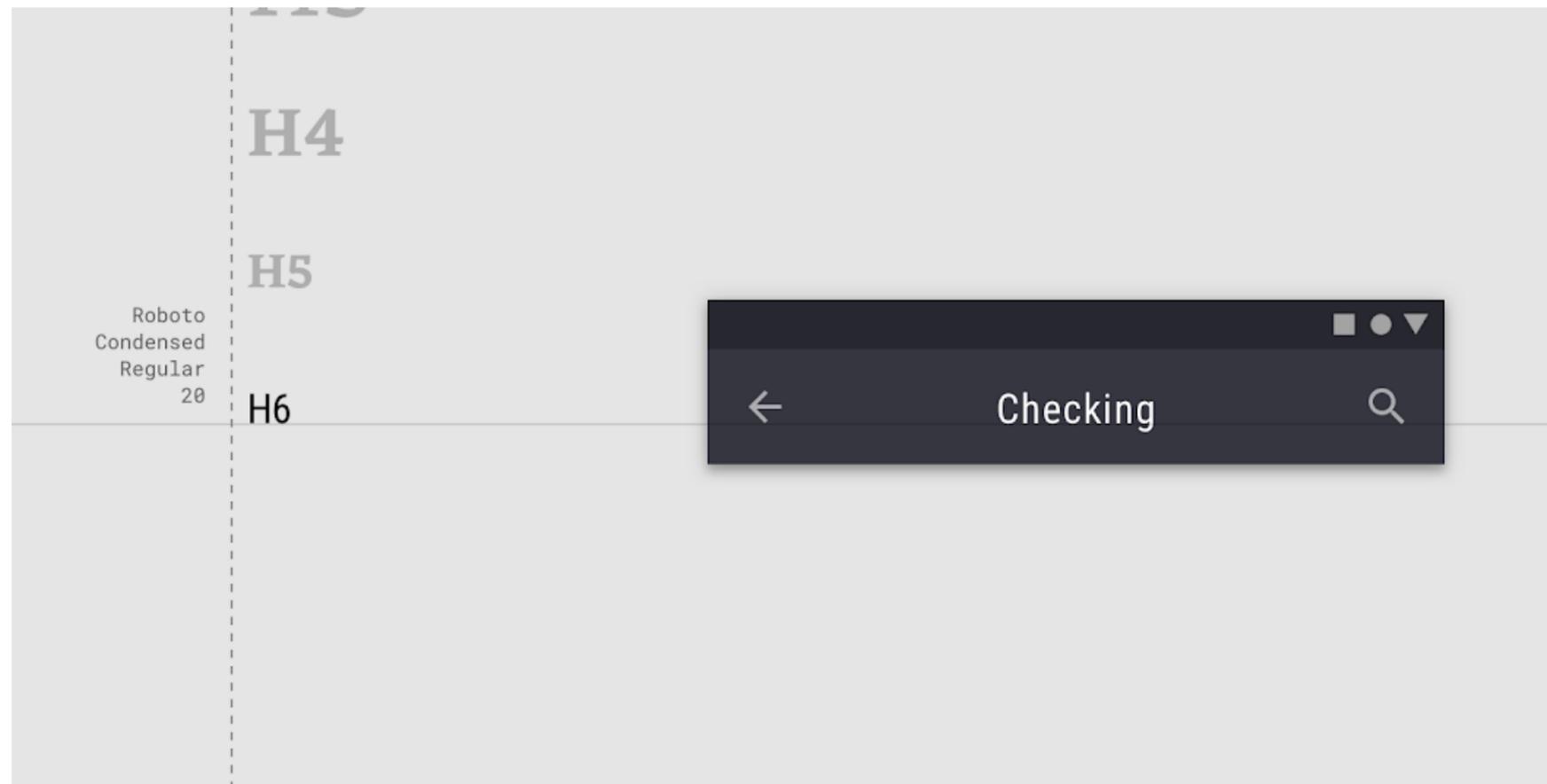
*Thank you for attending!*



# Typography

## Headline

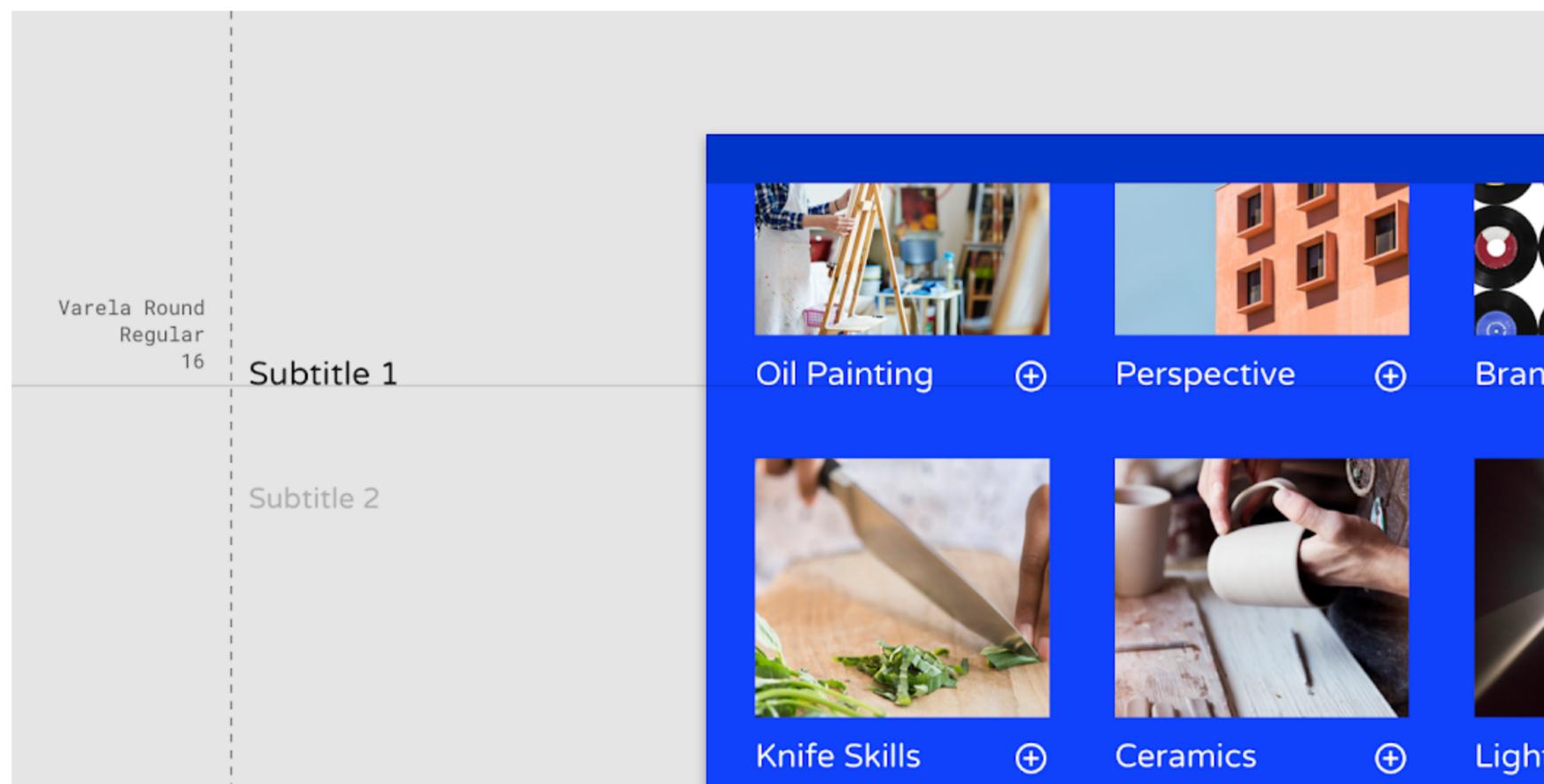
Serif or sans serif typefaces work well for headlines, especially at smaller sizes.



# Typography

## Subtitle

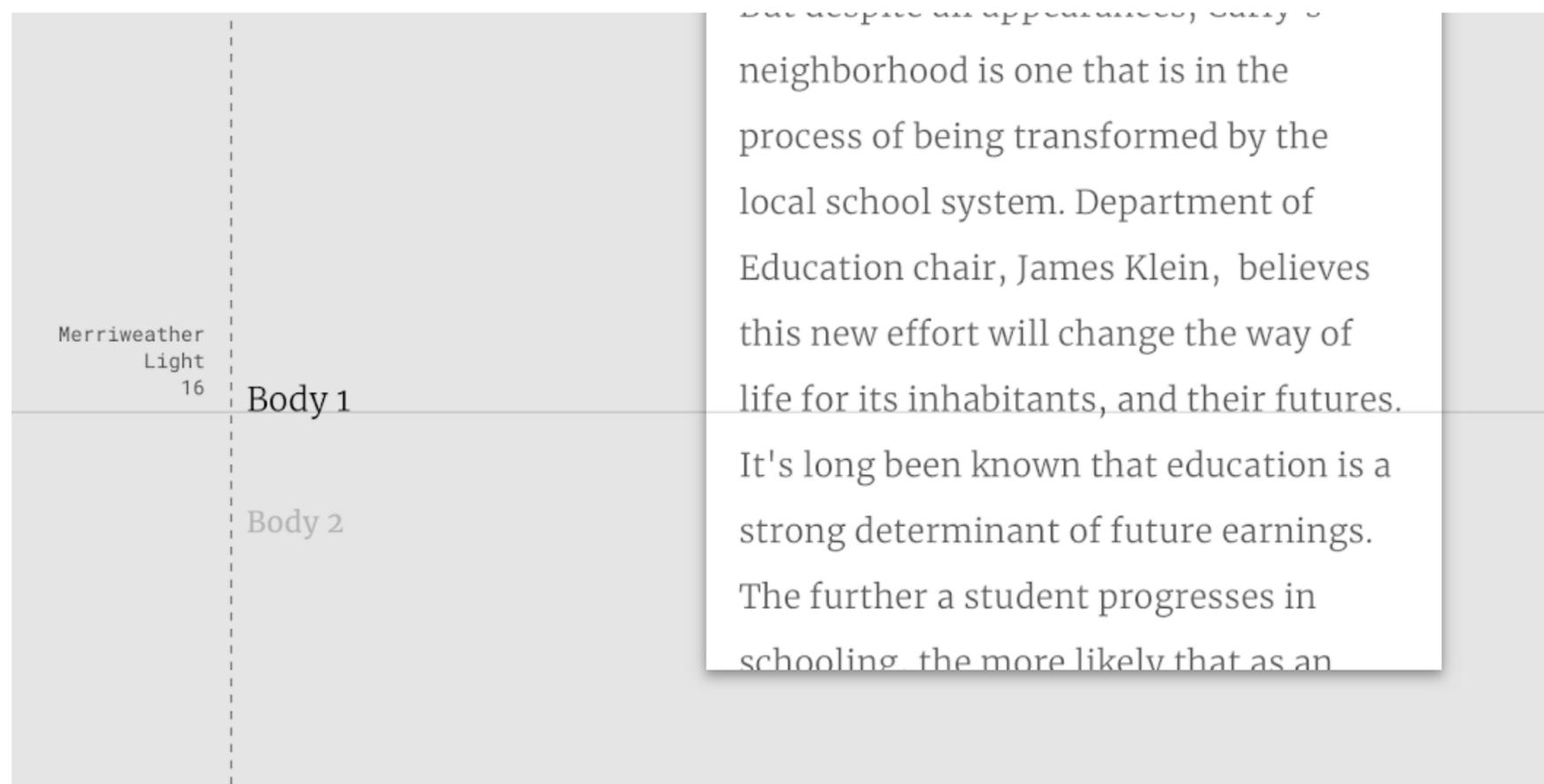
Subtitles are smaller than headlines. They are typically reserved for medium-emphasis text that is shorter in length. Serif or sans serif typefaces work well for subtitles.



# Typography

## Body text

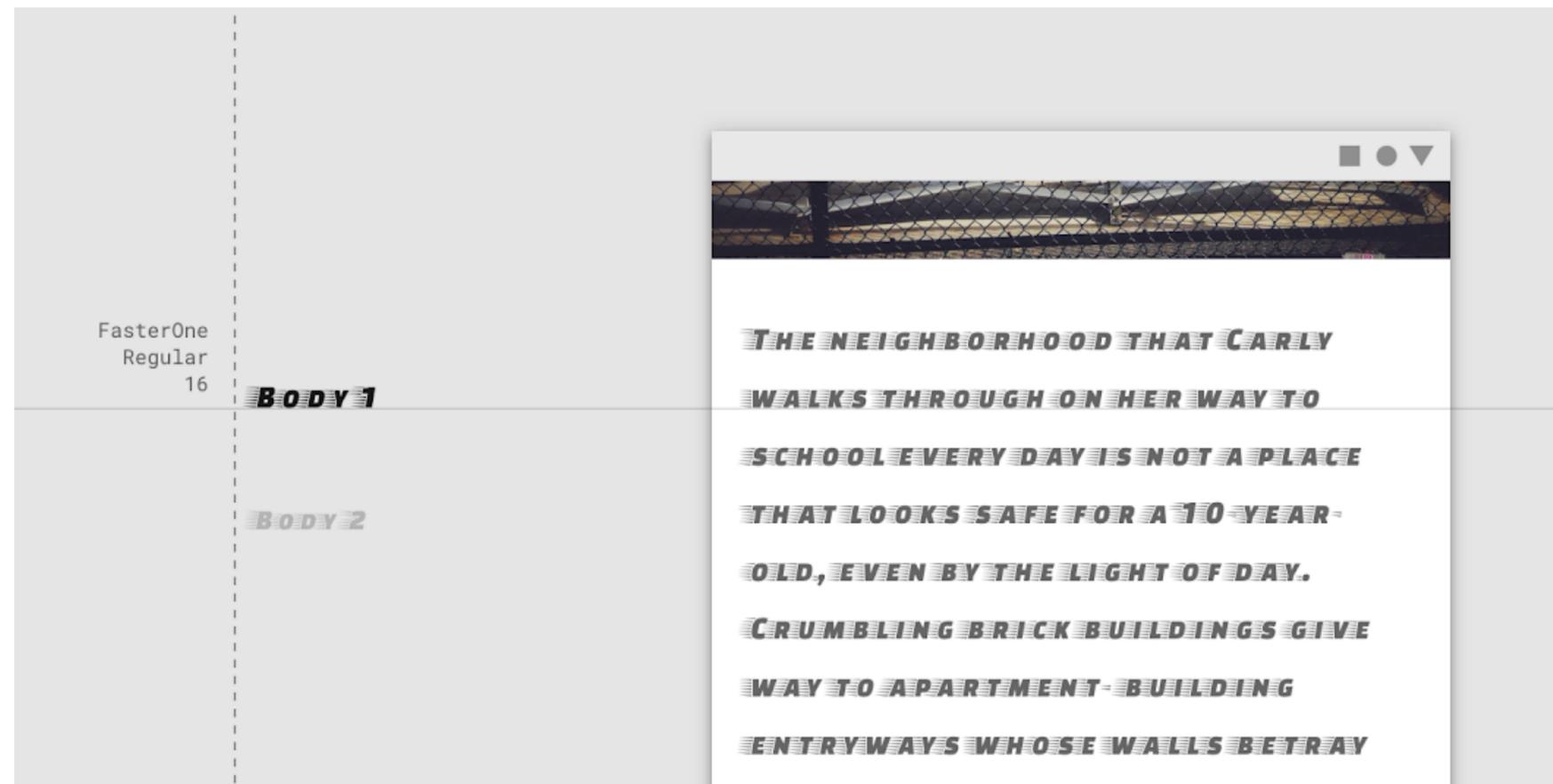
Body text comes in ranges 1-2, and it's typically used for long-form writing as it works well for small text sizes. For longer sections of text, a serif or sans serif typeface is recommended.



# Typography

## Body text

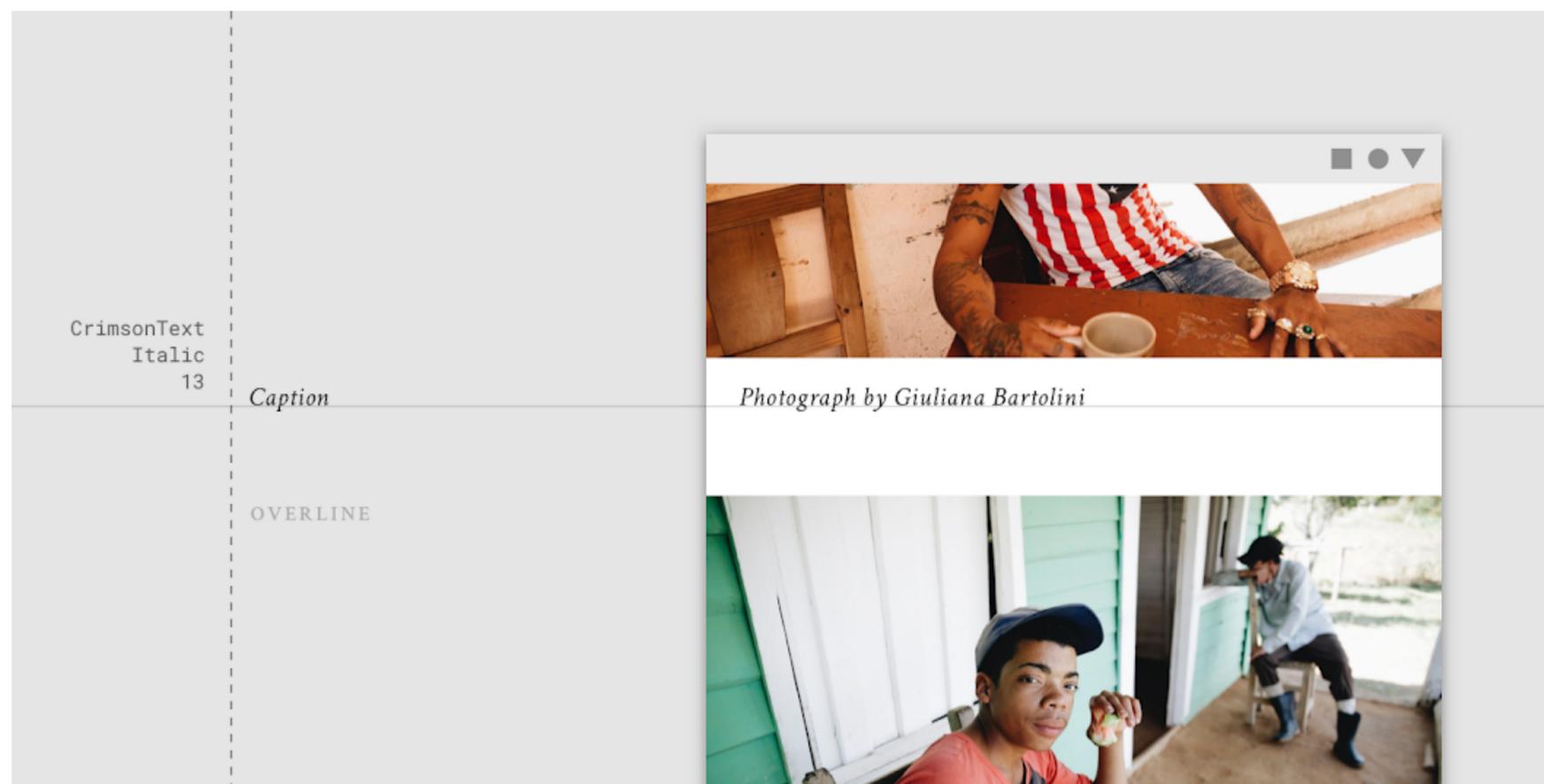
Don't use expressive fonts, including display, handwritten, and script styles for body copy.



# Typography

## Caption and overline

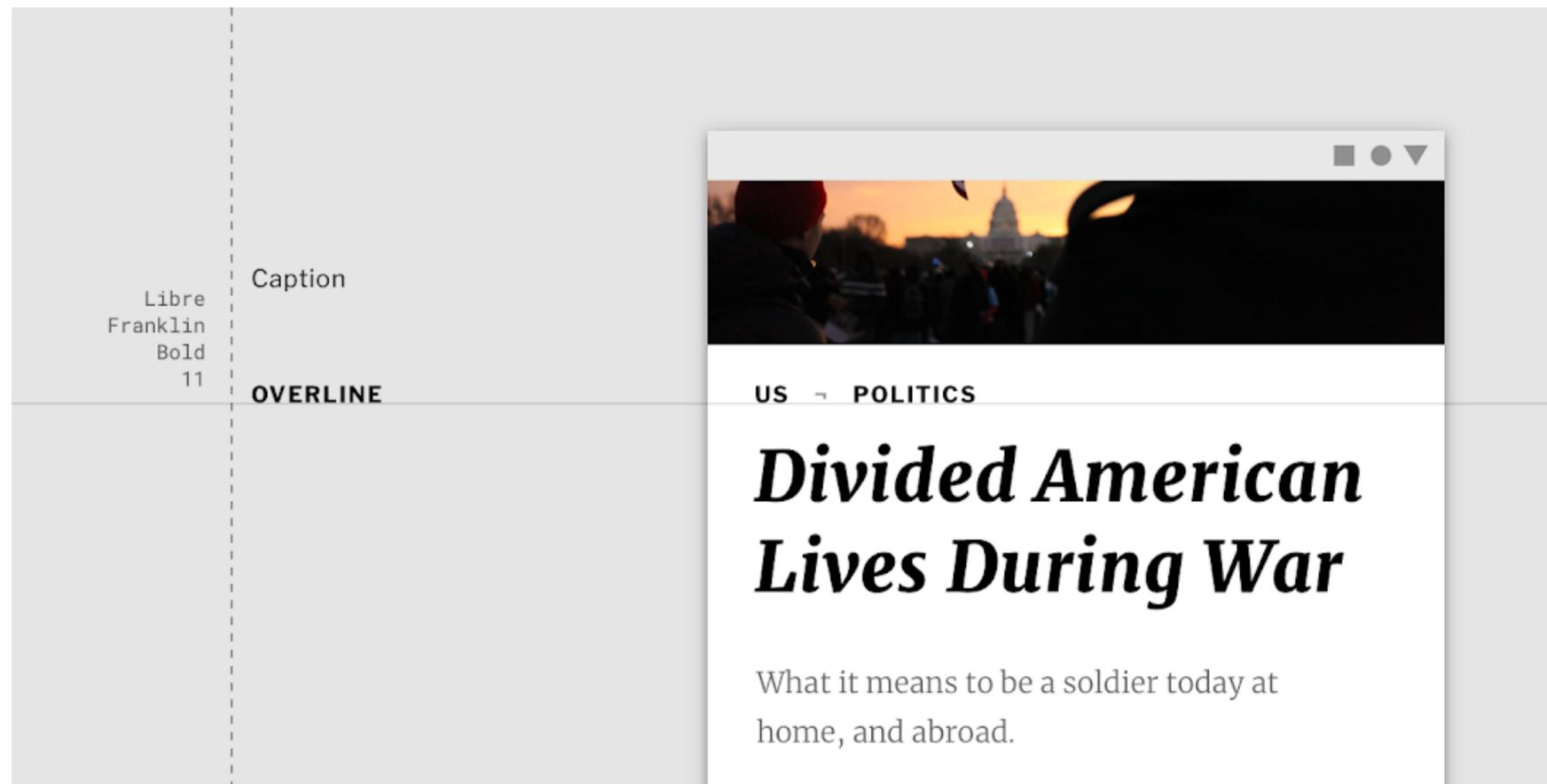
Caption and overline text (text with a line above it) are the smallest font sizes. They are used sparingly to annotate imagery or to introduce a headline.



# Typography

## Caption and overline

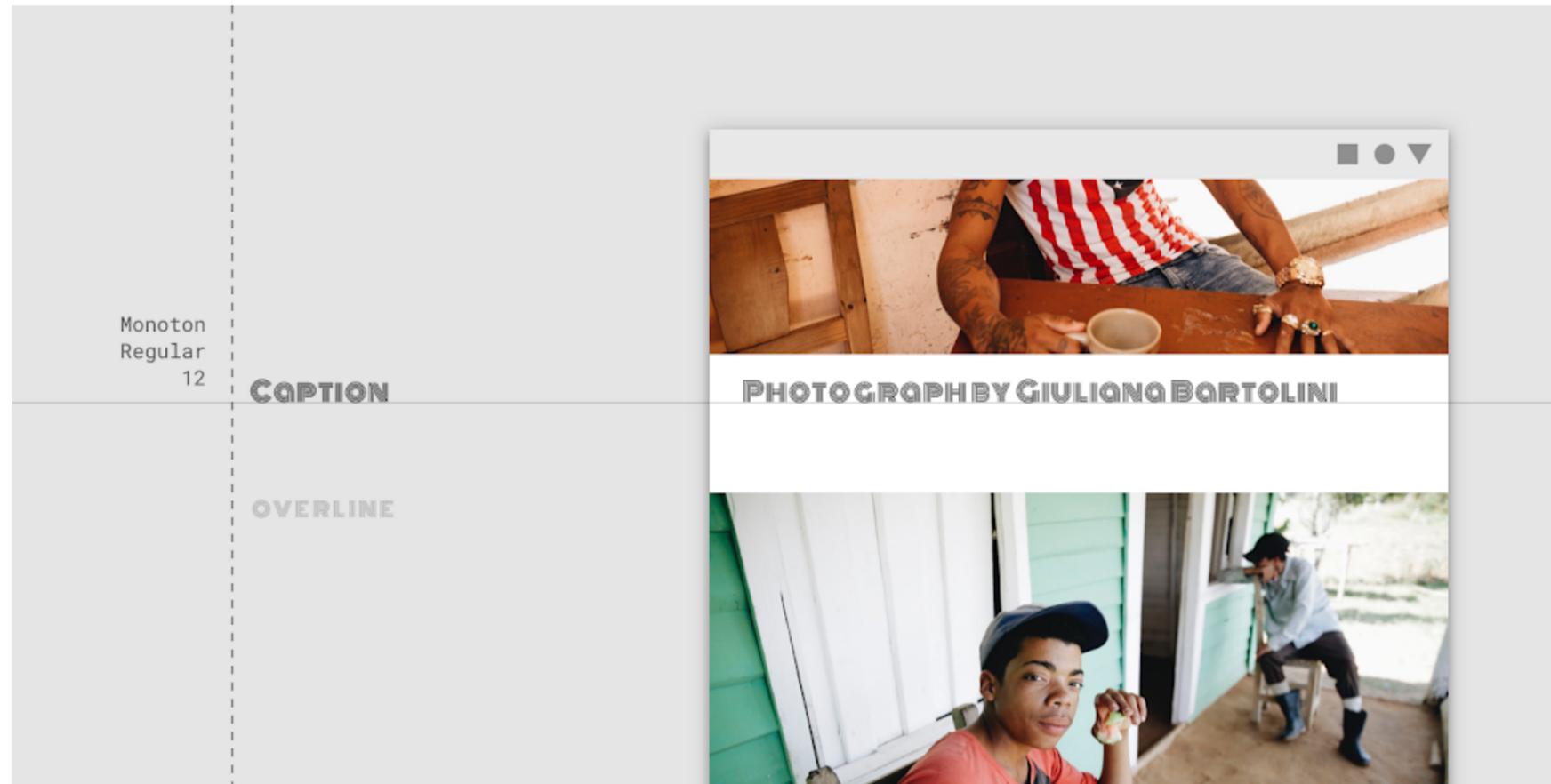
Caption and overline text (text with a line above it) are the smallest font sizes. They are used sparingly to annotate imagery or to introduce a headline.



# Typography

## Caption and overline

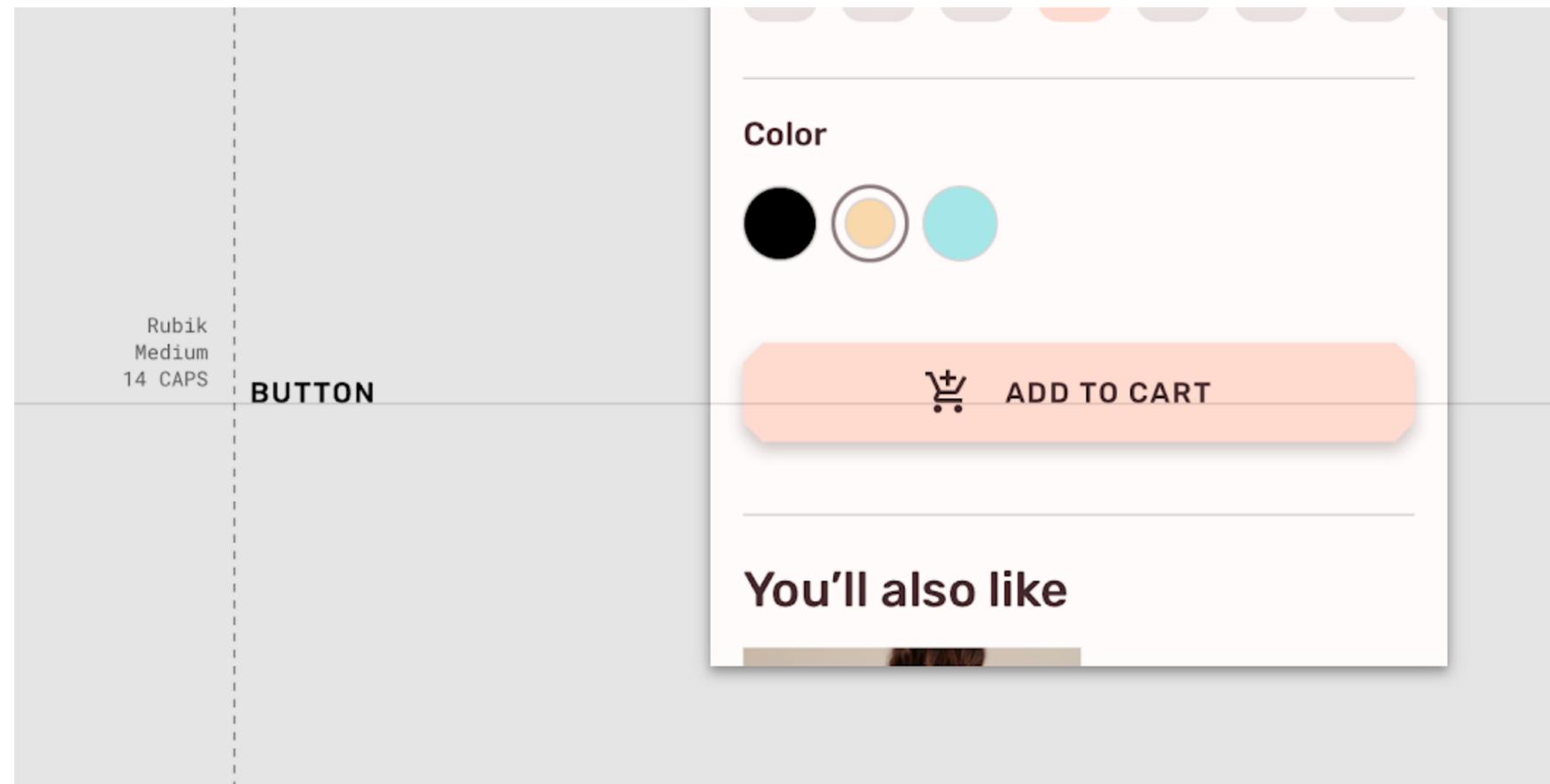
Don't use expressive fonts, including display, handwritten, and script styles for caption or overline.



# Typography

## Button text

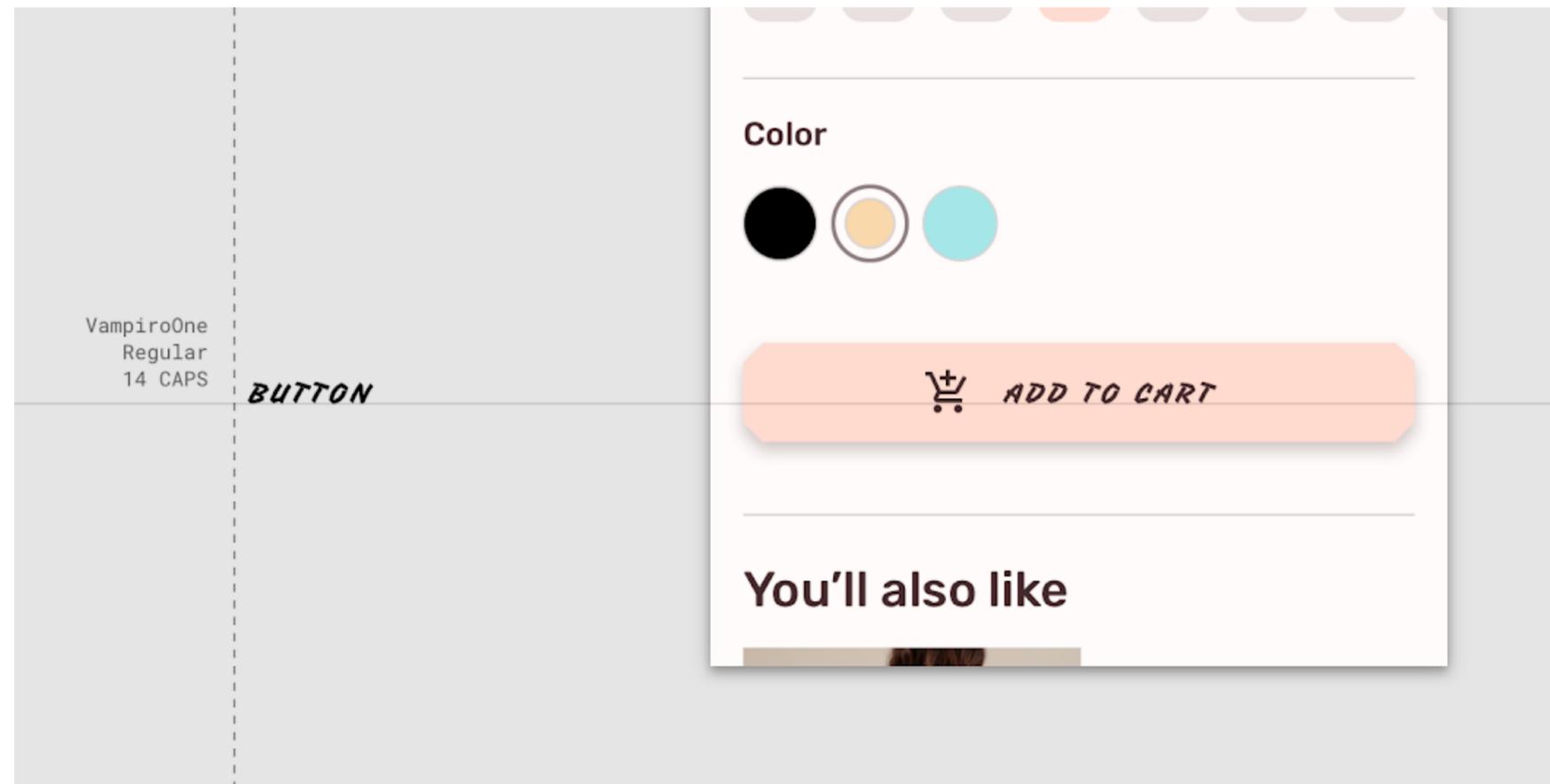
Button text is a call to action used by different types of buttons (such as text, outlined and contained buttons) and in tabs, dialogs, and cards.



# Typography

## Button text

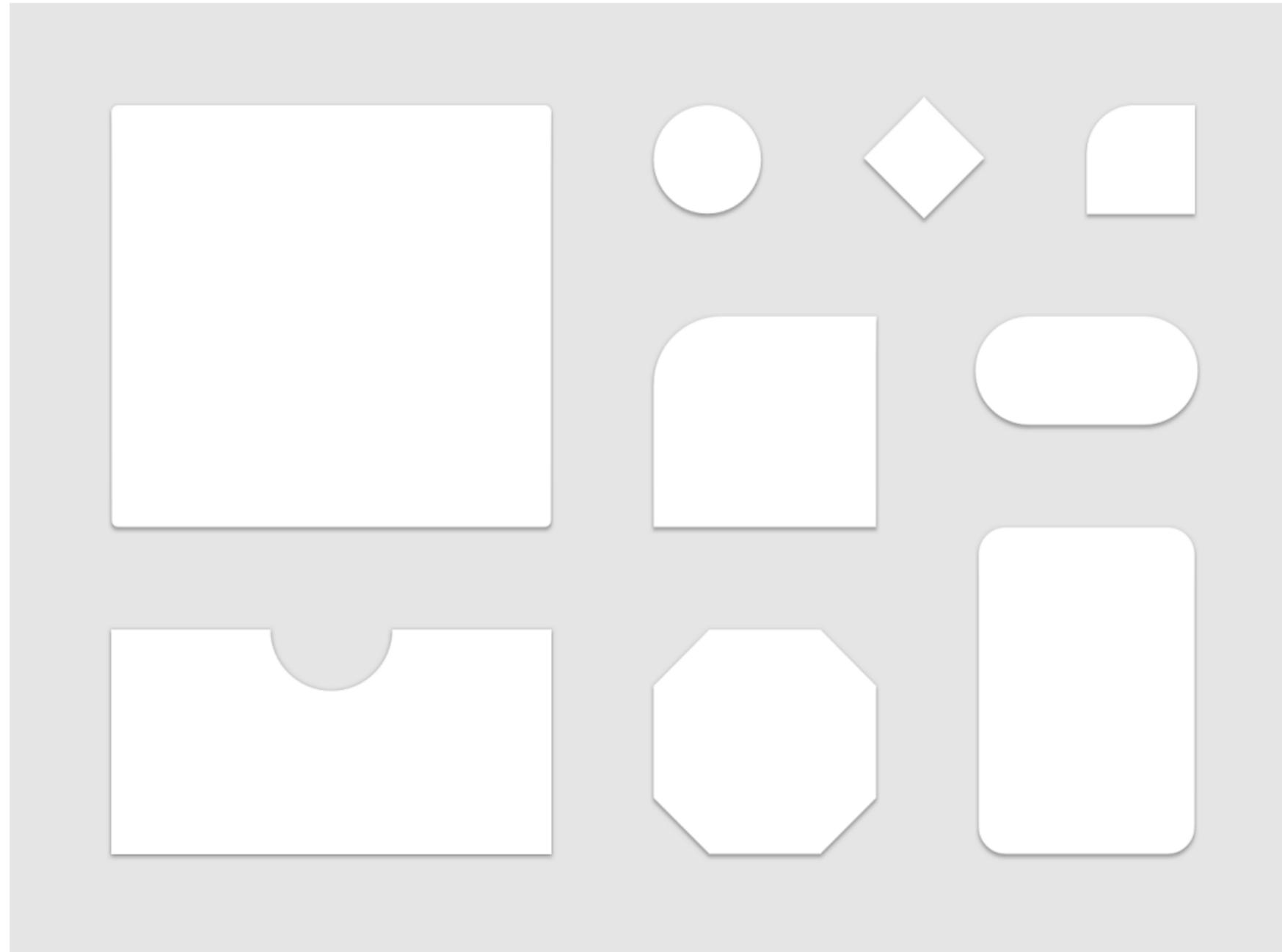
Don't use expressive fonts as button text, including display, handwritten, and script styles.



Shape

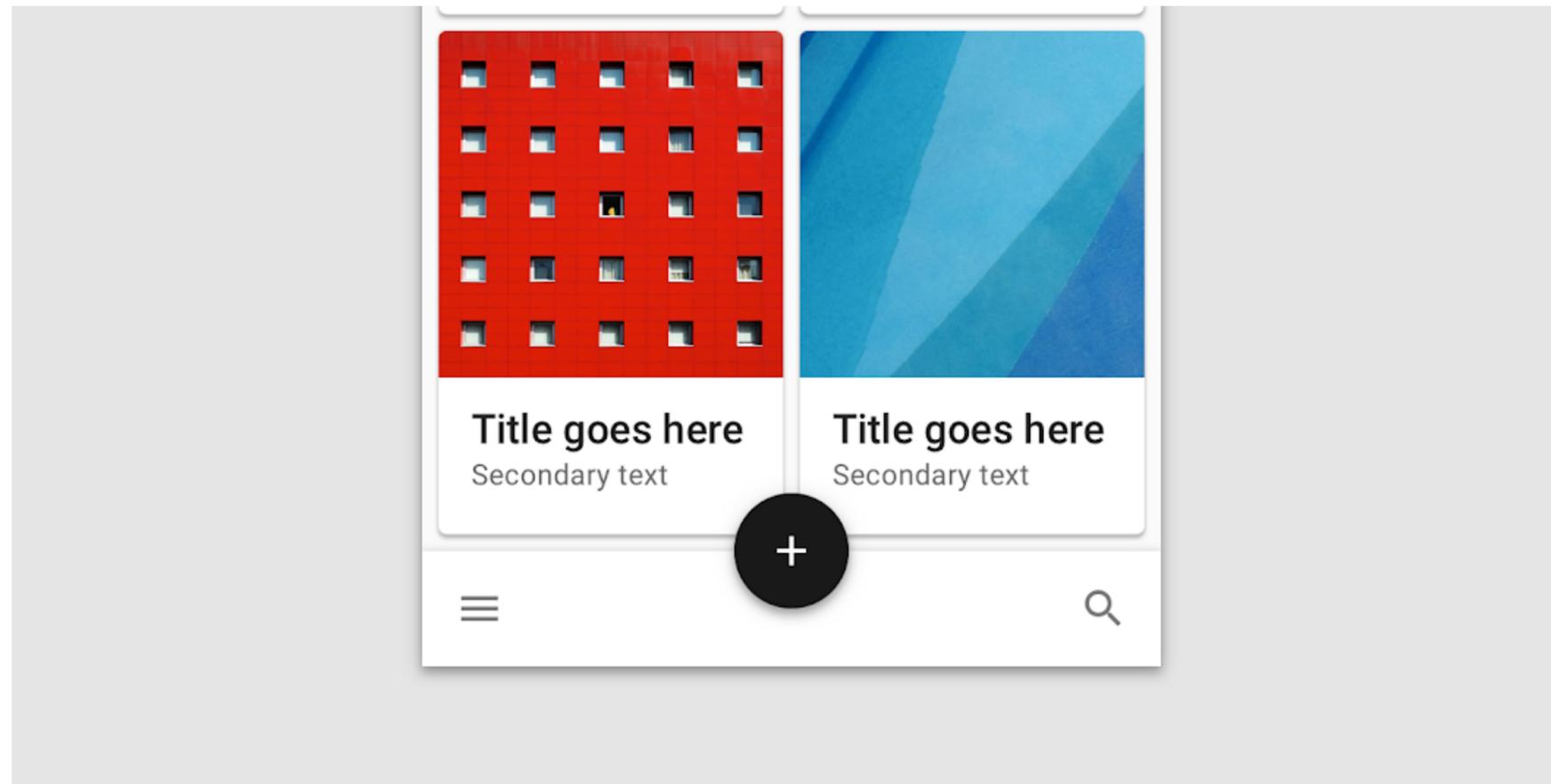
# Shape

Material surfaces can be displayed in different shapes. Shapes direct attention, identify components, communicate state, and express brand.



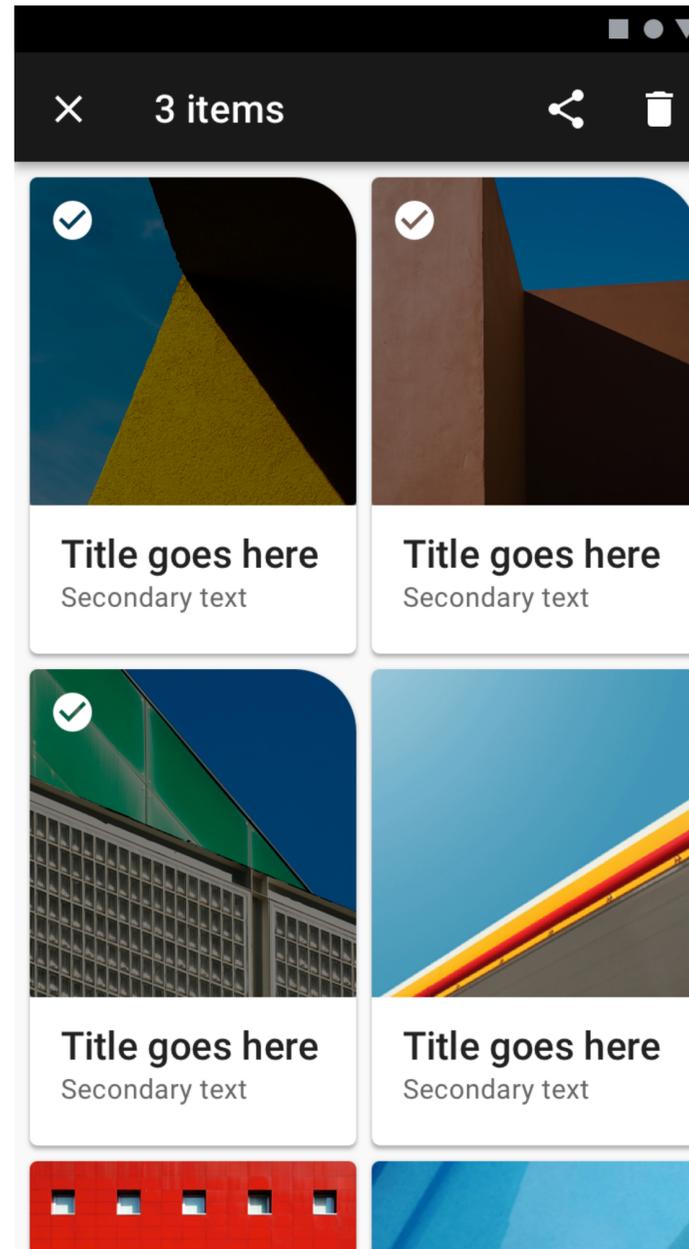
# Shape

Shapes that are unique differ from the shapes around them, making them stand out.



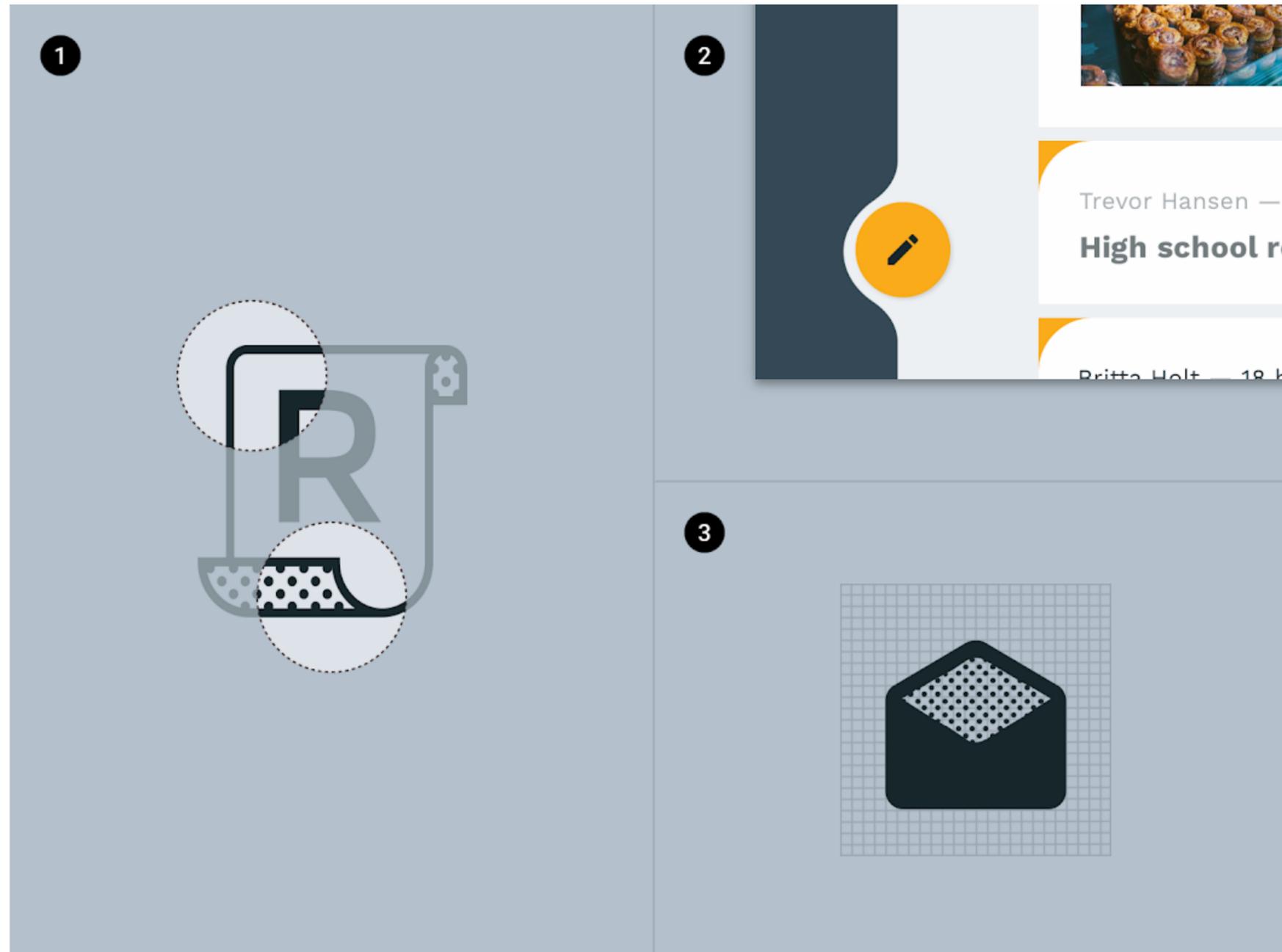
# Shape

Use shape consistently, so that each shape expresses a single meaning.



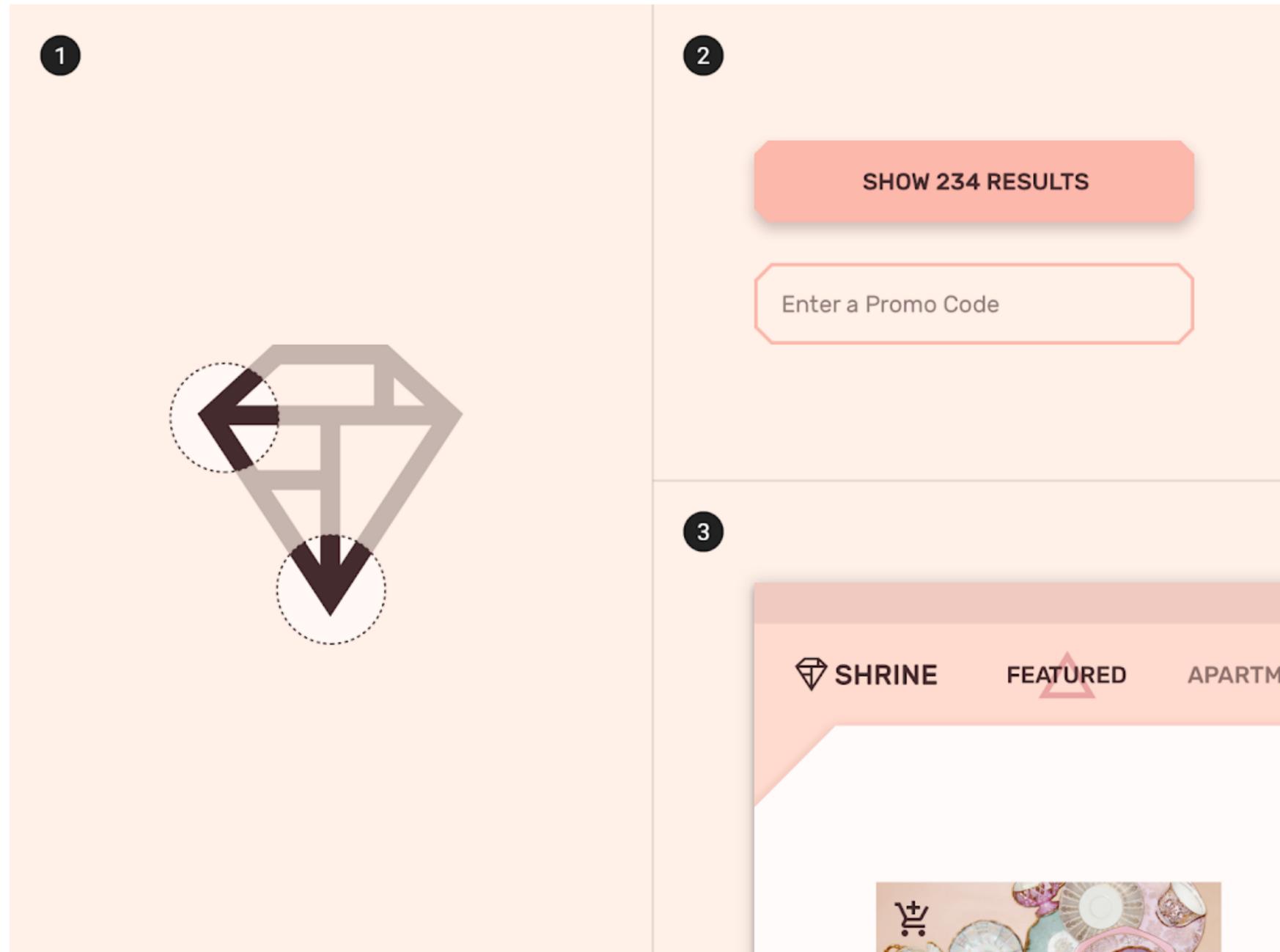
# Shape

Consistent use of shape throughout a product contributes to a brand's visual language.



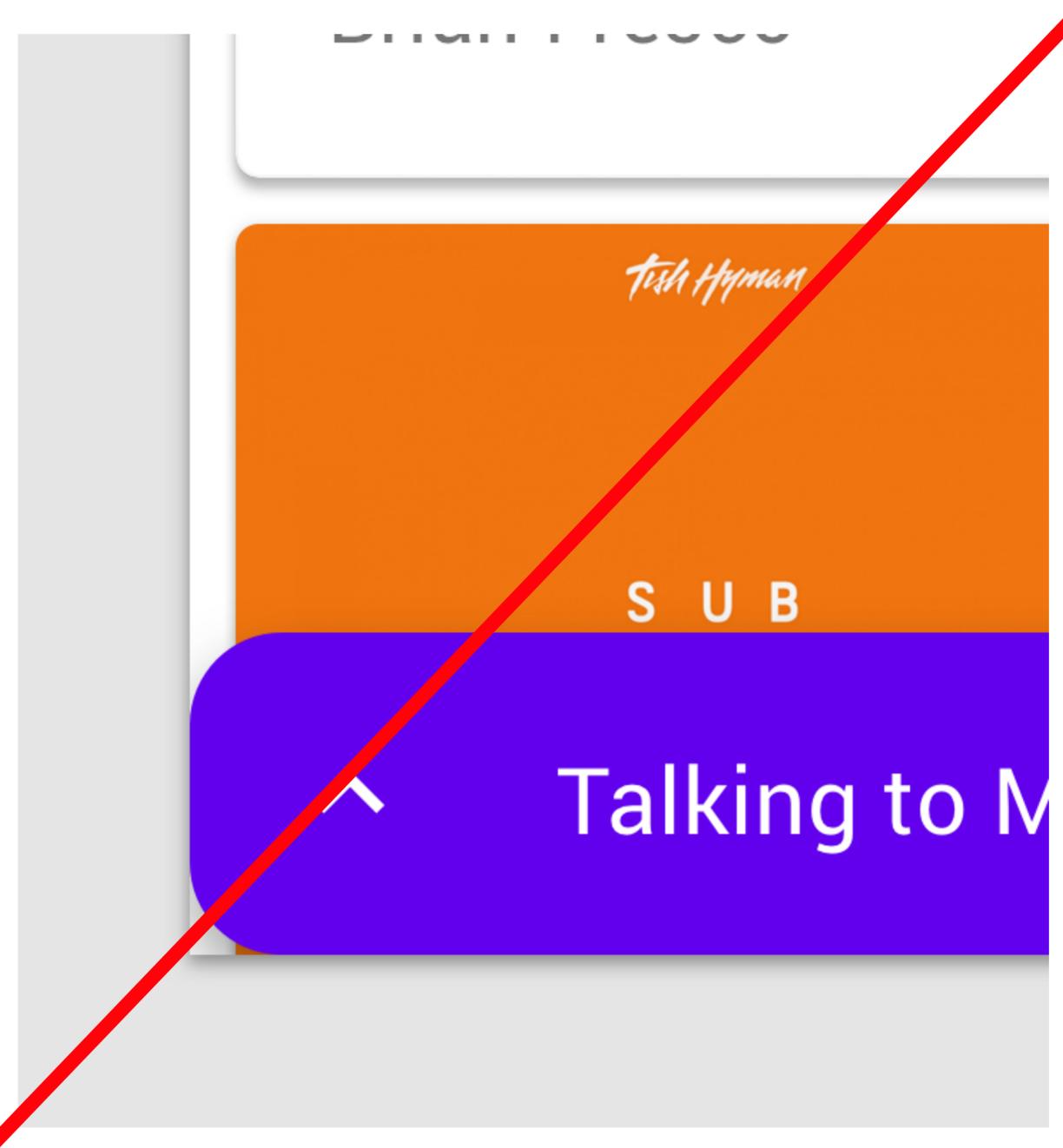
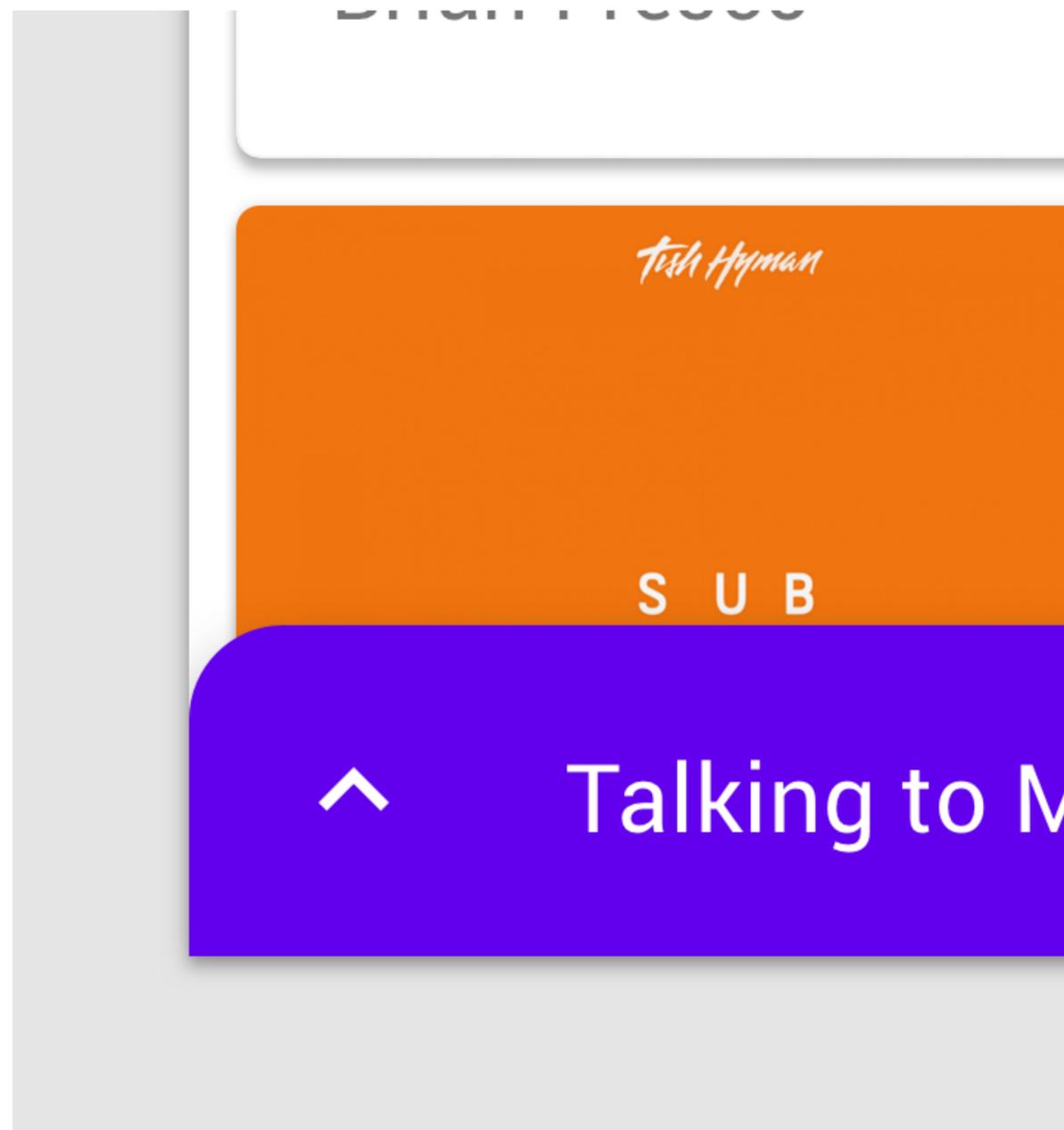
# Shape

Consistent use of shape throughout a product contributes to a brand's visual language.



# Shape

Component corners that are anchored to screen edges can't be customized. Unique shapes on anchored corners would create gaps that display content behind a component.

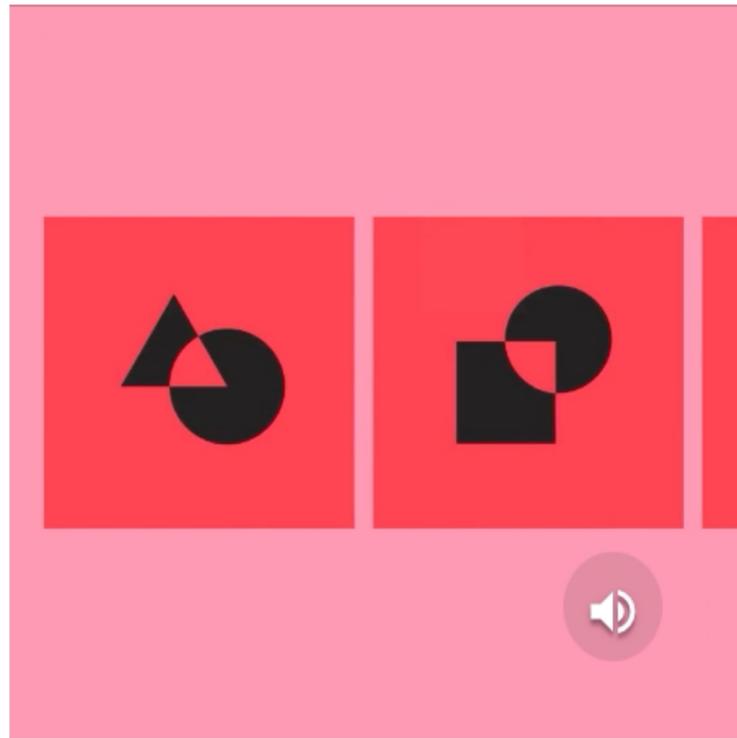


# Motion

# Motion

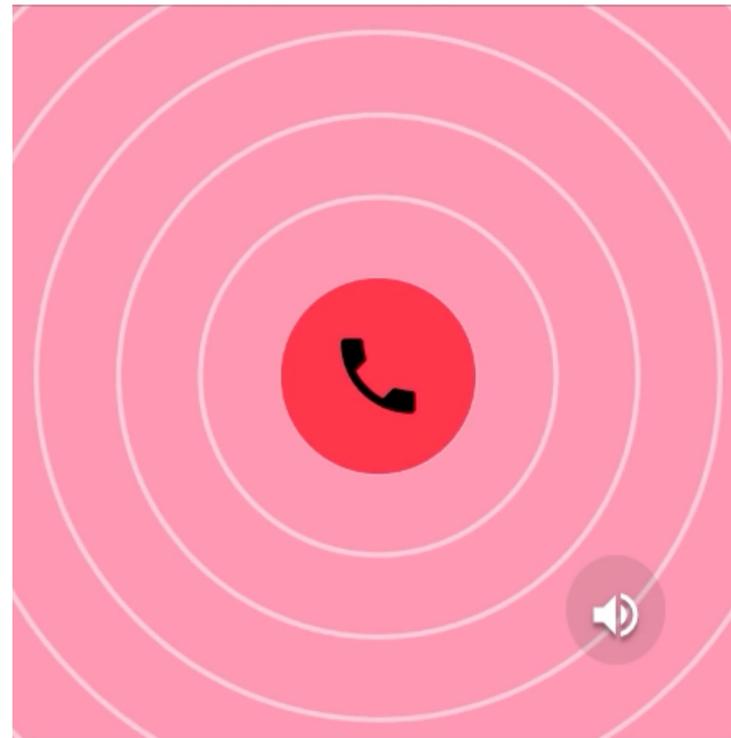
## Principles

Motion helps make a UI expressive and easy to use.



### Informative

Motion design informs users by highlighting relationships between elements, action availability, and action outcomes.



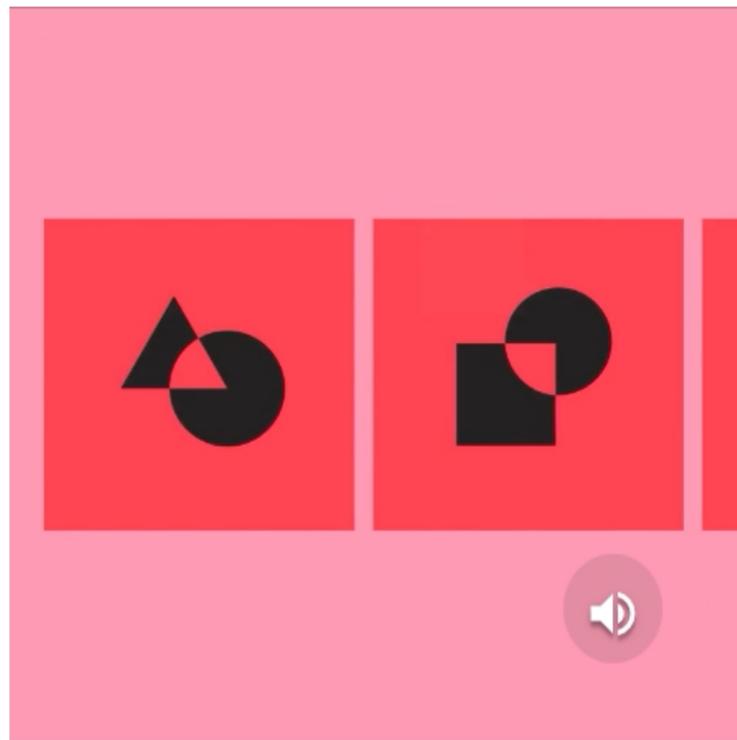
### Focused

Motion focuses attention on what's important, without creating unnecessary distraction.

# Motion

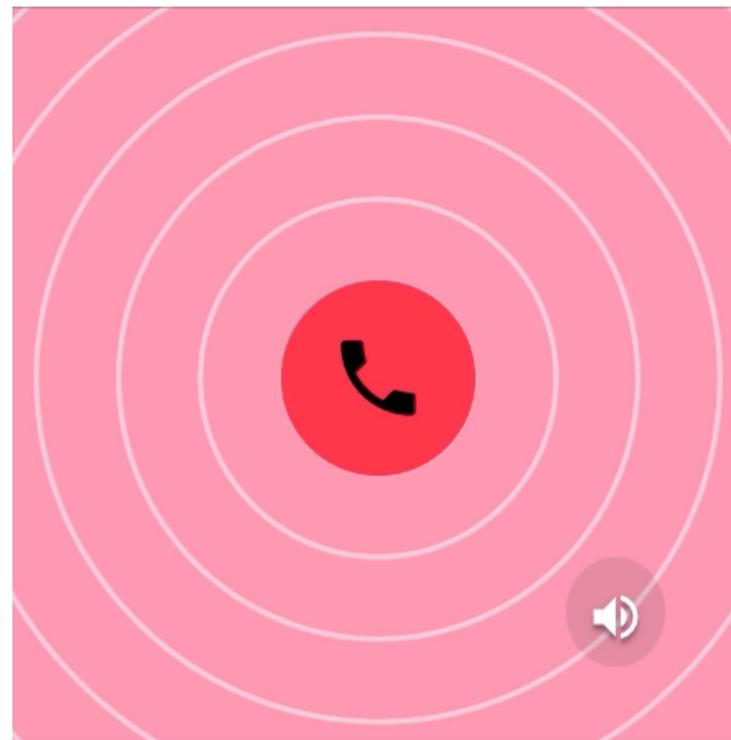
## Principles

Motion helps make a UI expressive and easy to use.



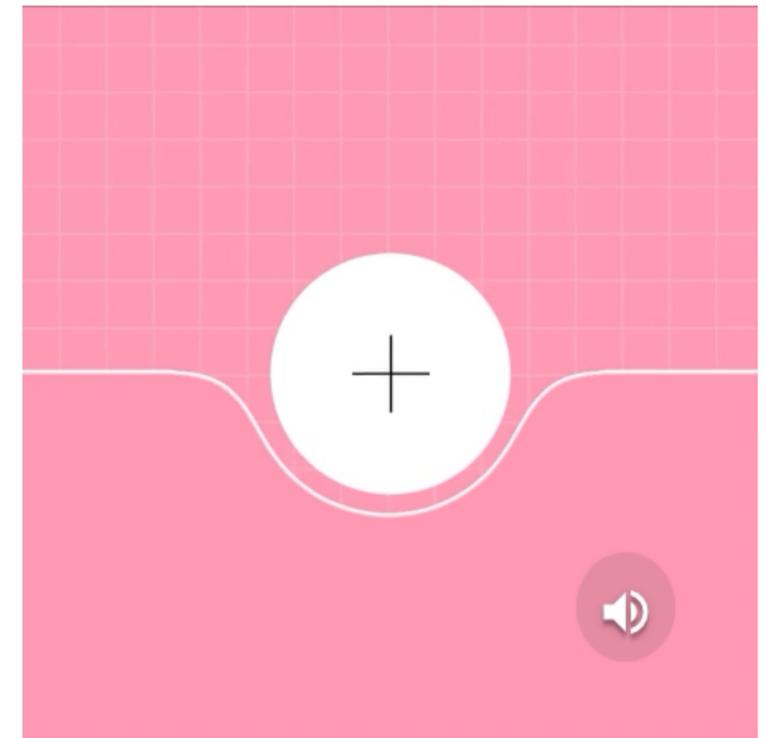
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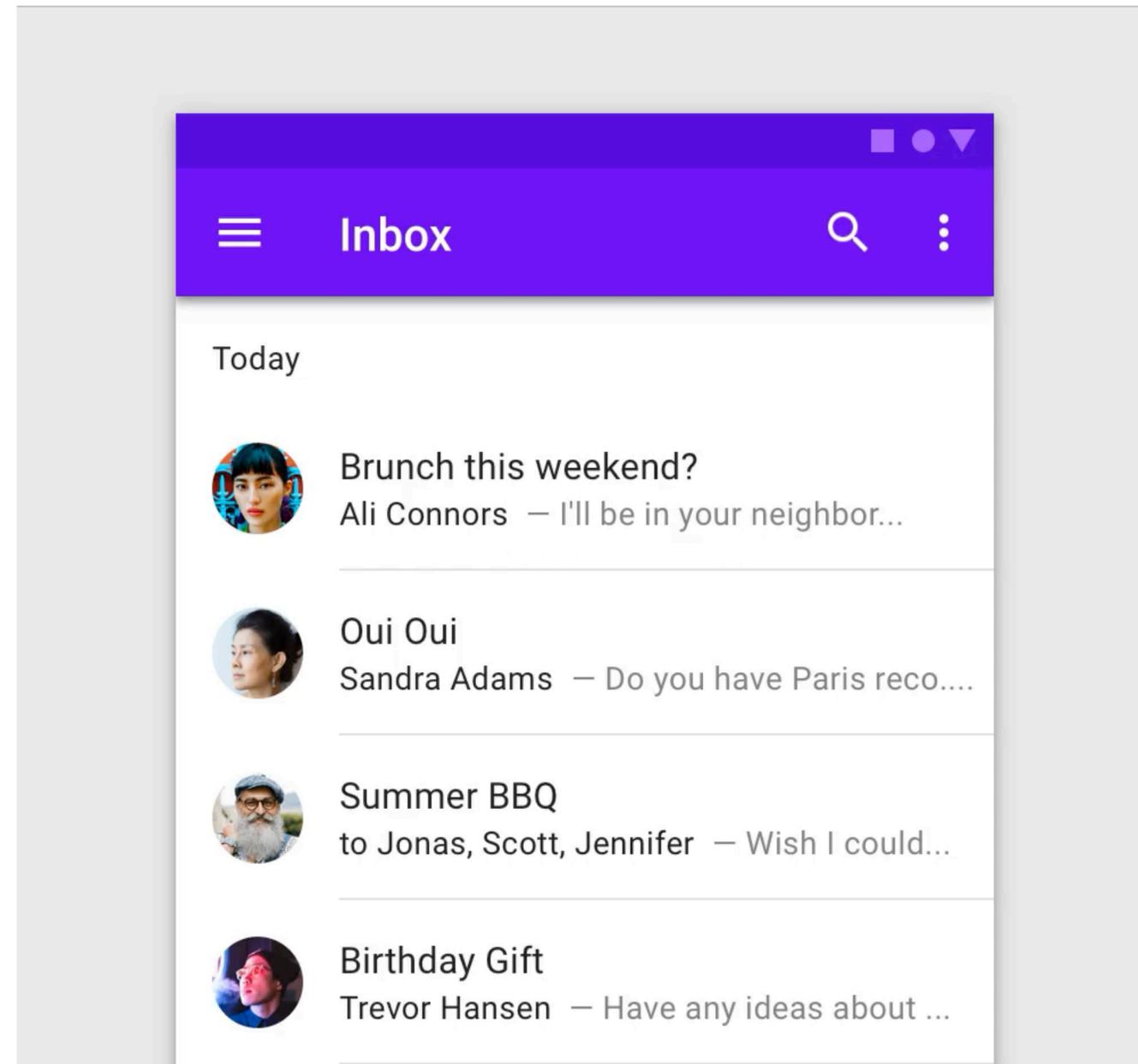
### Expressive

Motion celebrates moments in user journeys, adds character to common interactions, and can express a brand's style.

# Motion

## Hierarchy

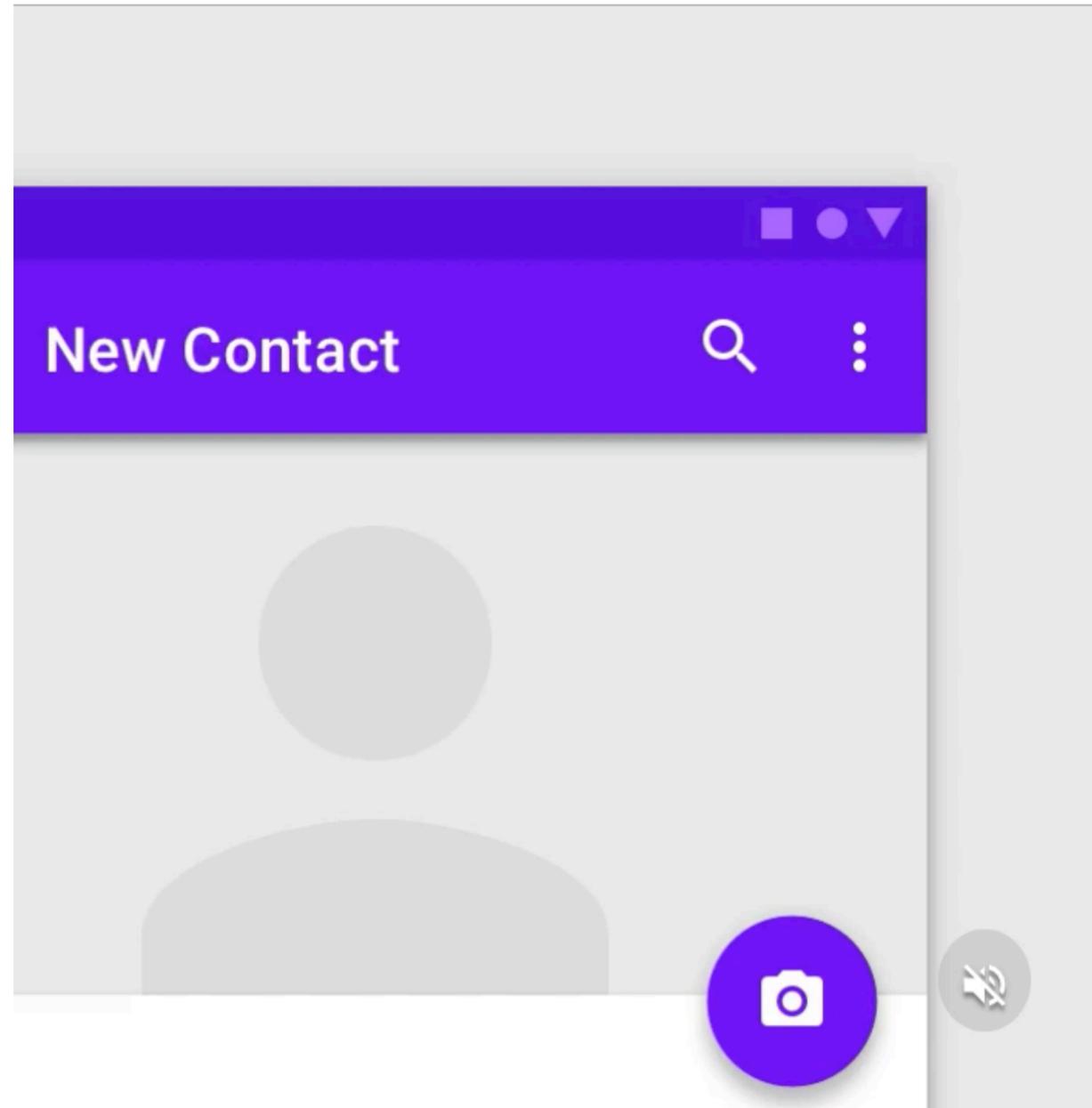
Motion helps orient users by showing how elements in a transition are related.



# Motion

## Hierarchy

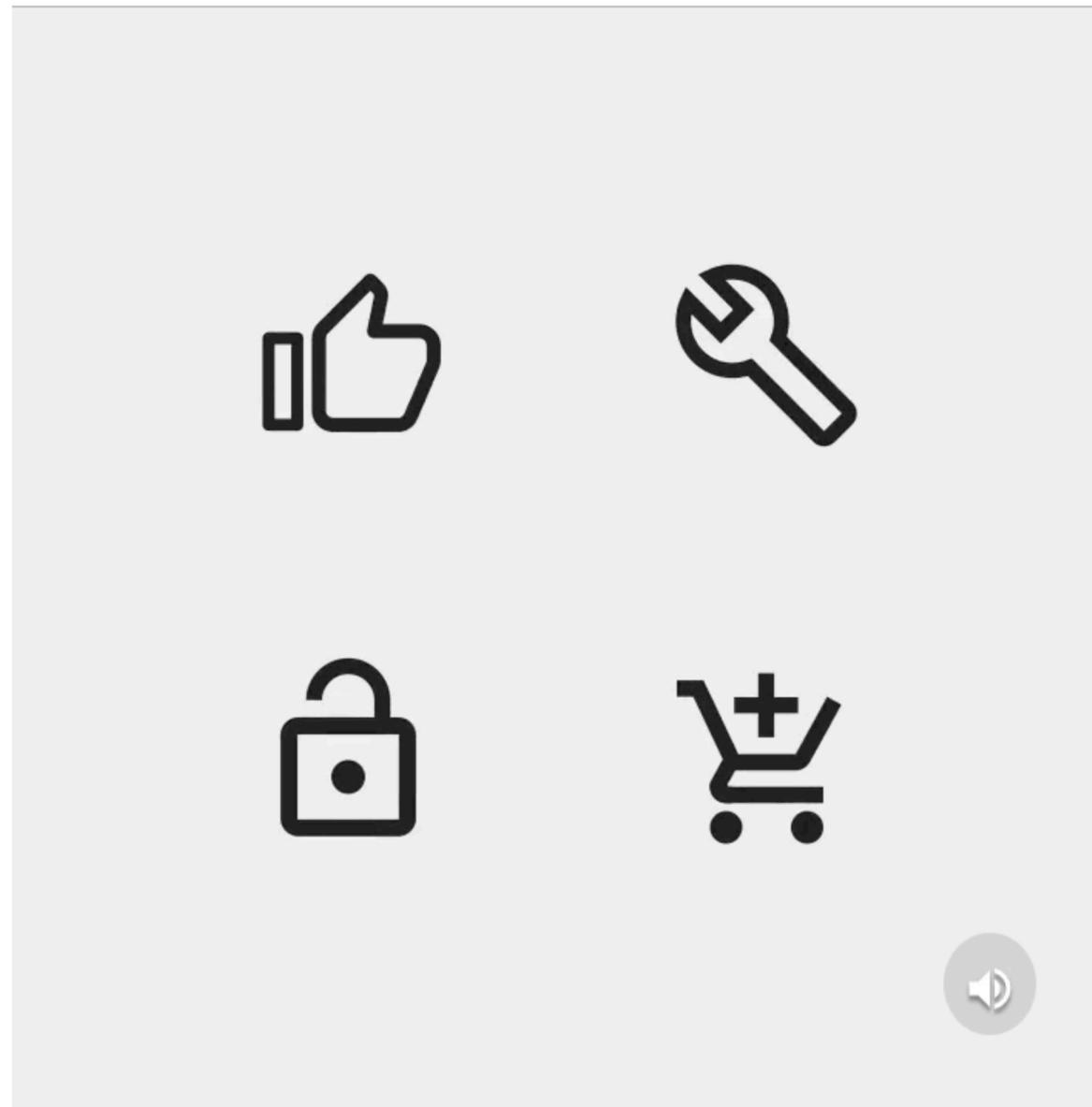
Motion helps orient users by showing how elements in a transition are related.



# Motion

## Icons and illustrations

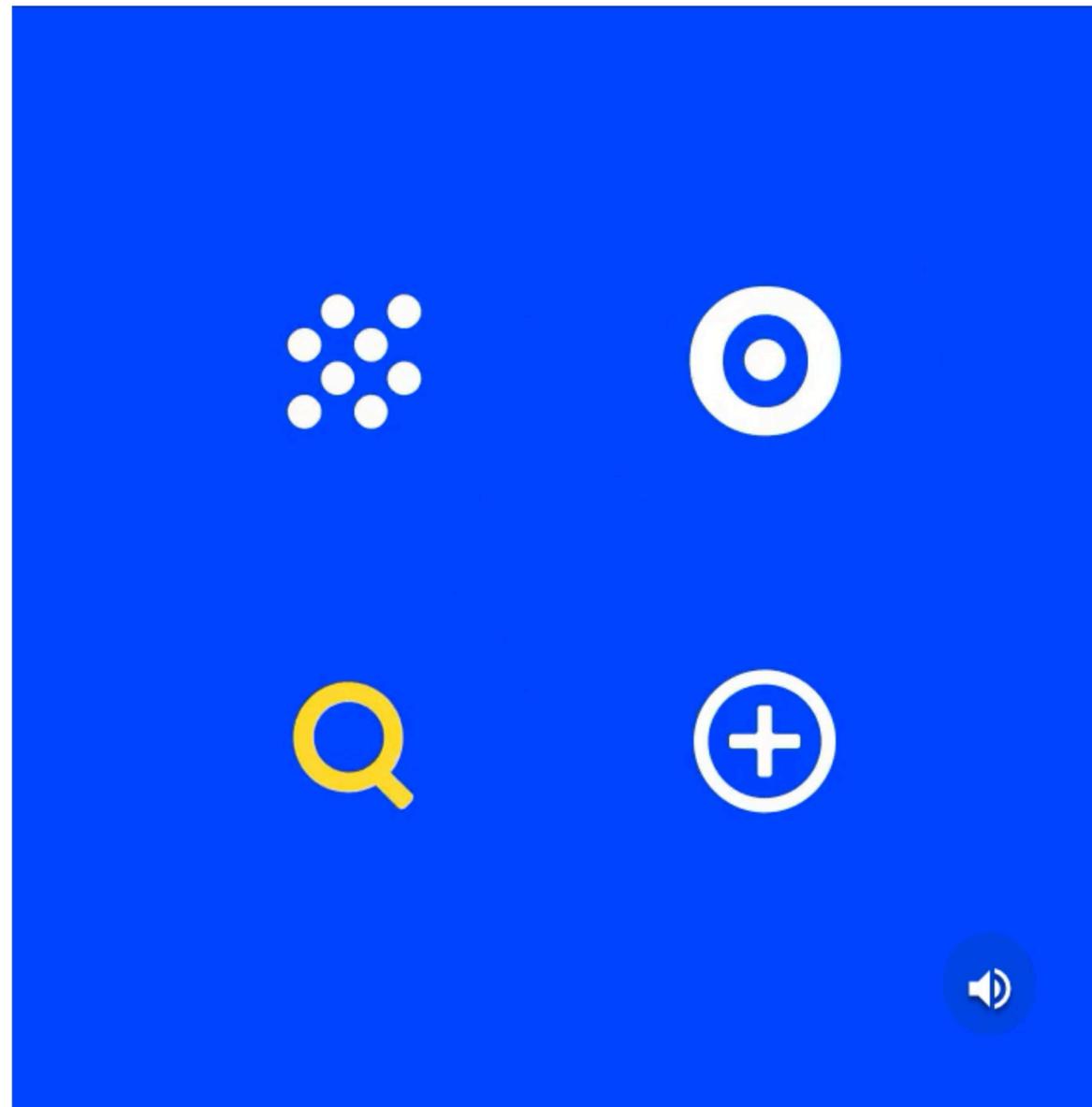
Subtle animation in icons, illustrations, and product logos can add polish and playfulness to the user experience.



# Motion

## Icons and illustrations

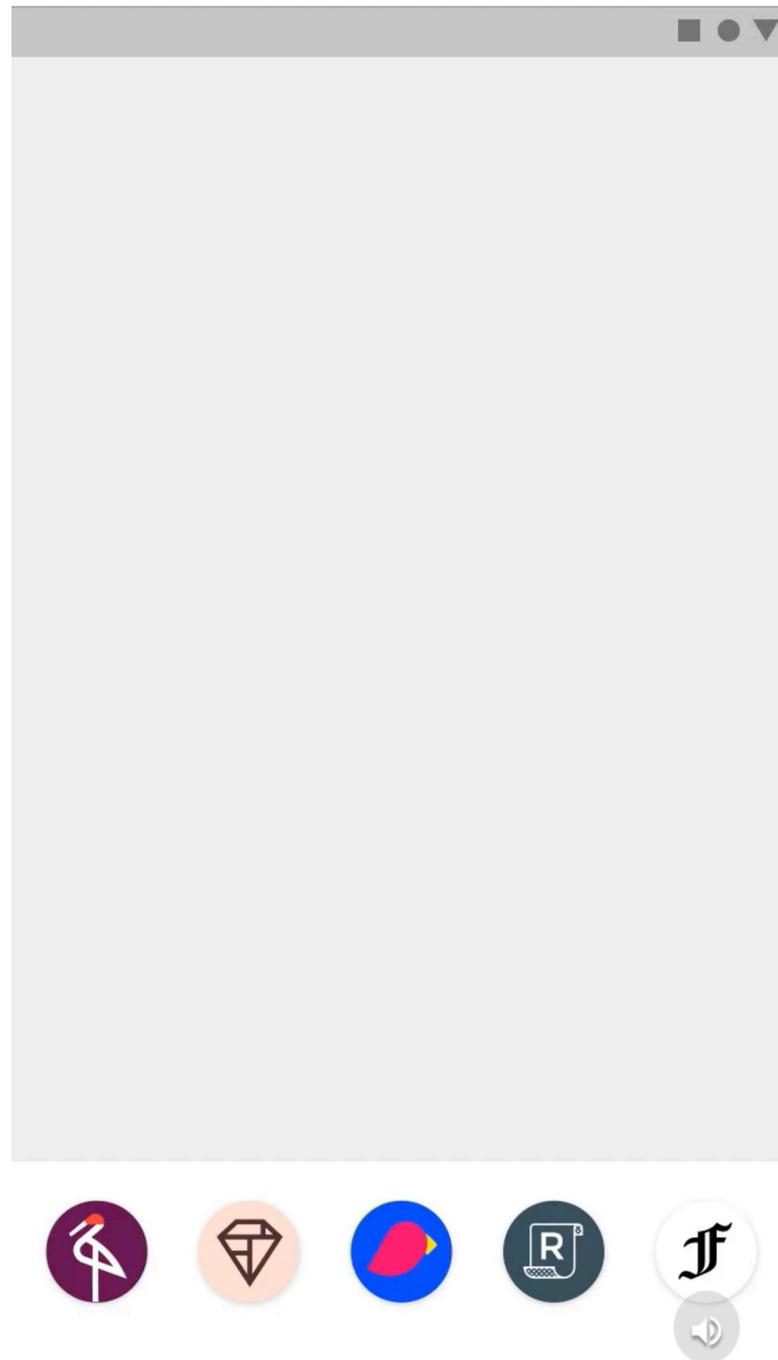
Subtle animation in icons, illustrations, and product logos can add polish and playfulness to the user experience.



# Motion

## Icons and illustrations

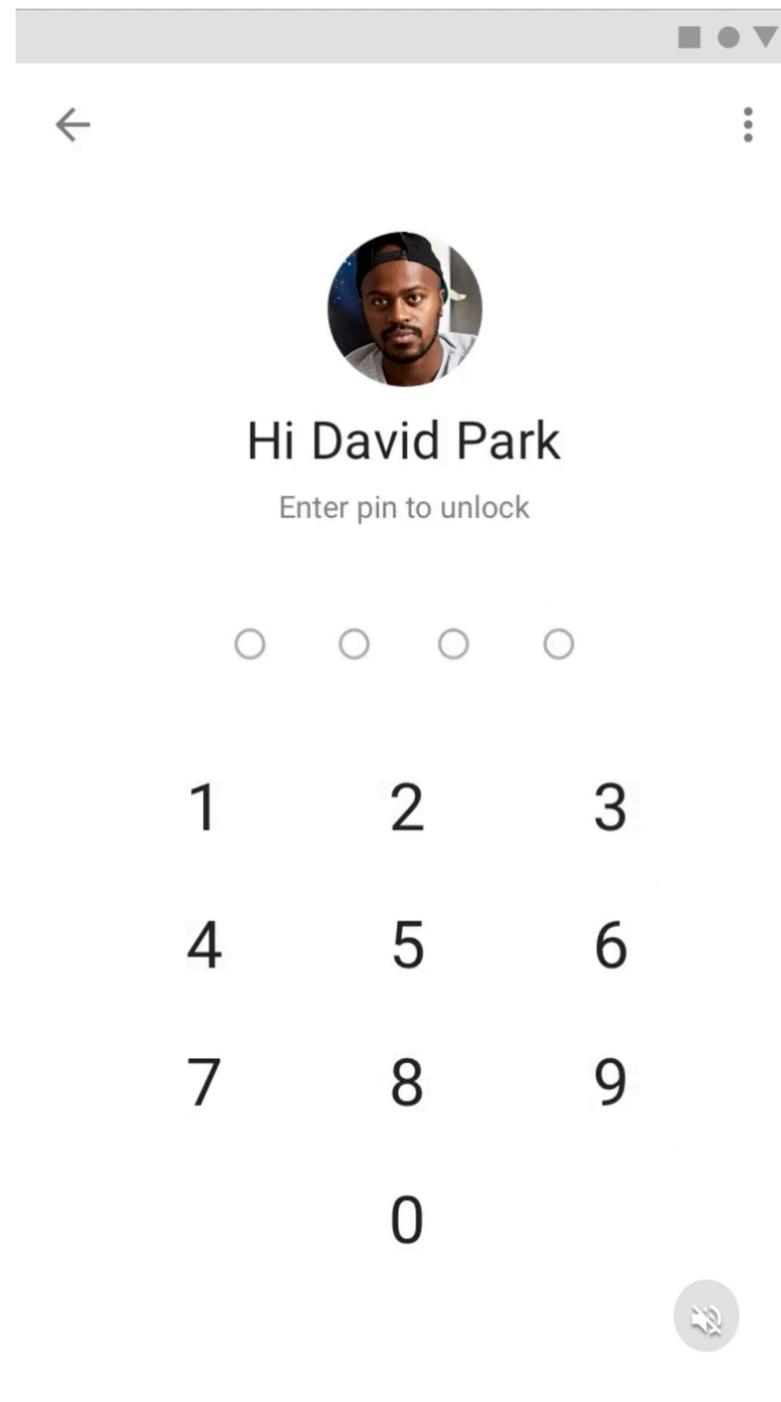
Subtle animation in icons, illustrations, and product logos can add polish and playfulness to the user experience.



# Motion

## Feedback and status

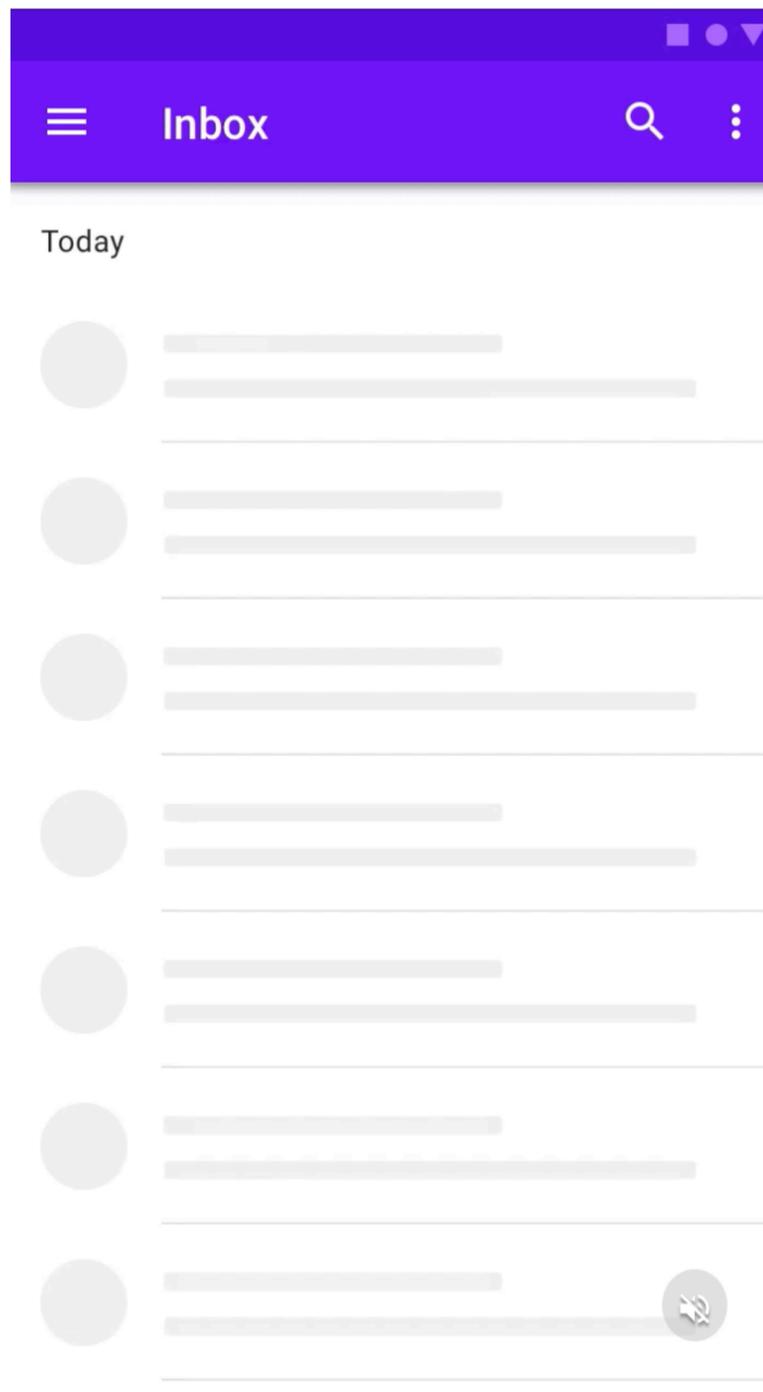
Motion provides timely feedback and indicates the status of user or system actions.



# Motion

## Feedback and status

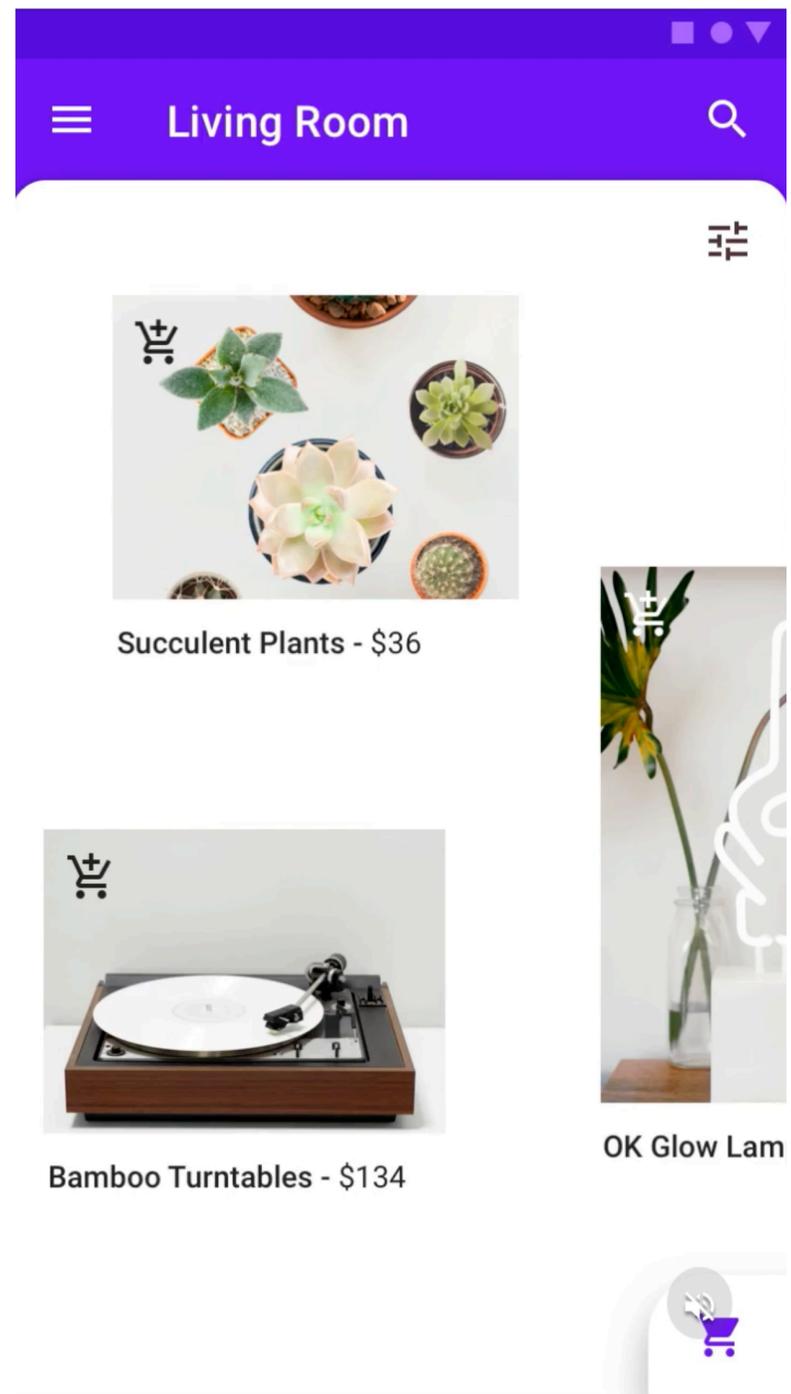
Motion provides timely feedback and indicates the status of user or system actions.



# Motion

User education

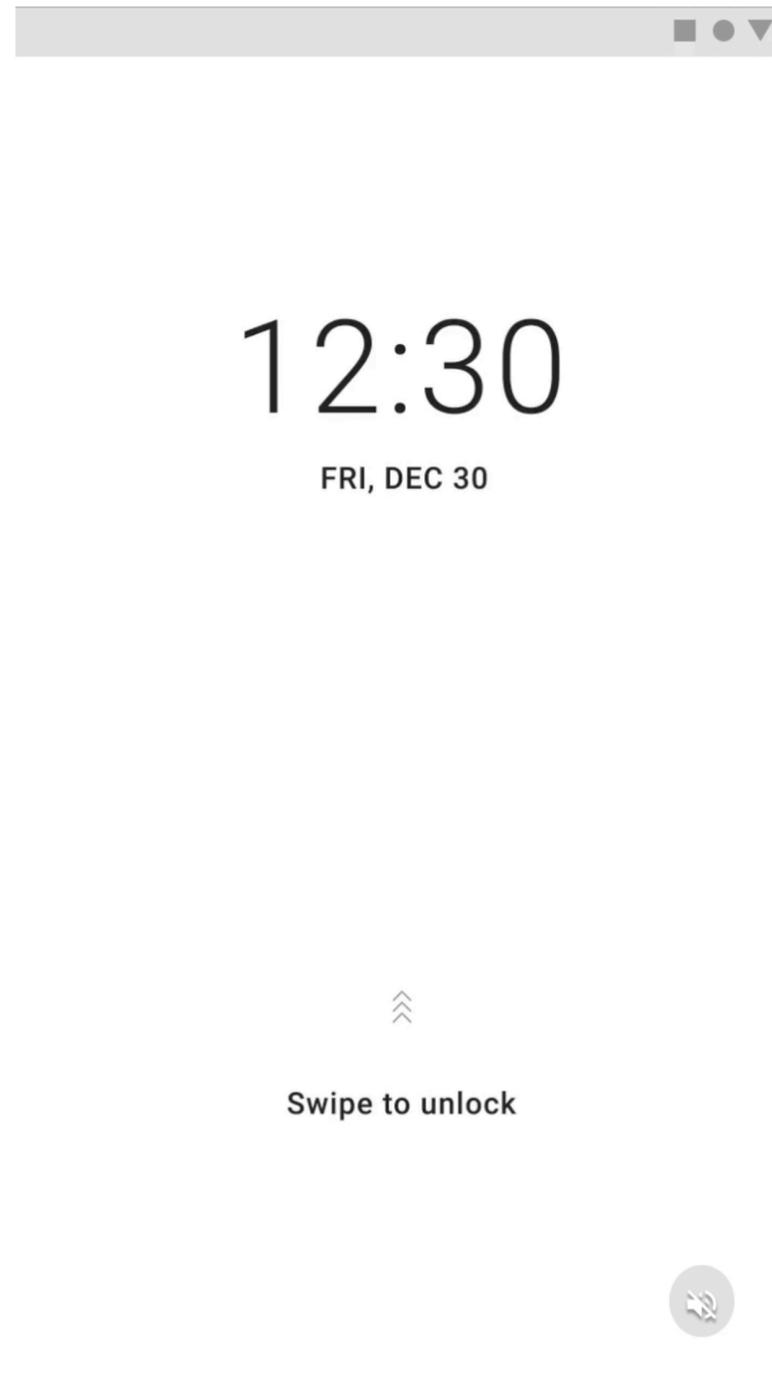
Motion helps users understand how to perform actions.



# Motion

## User education

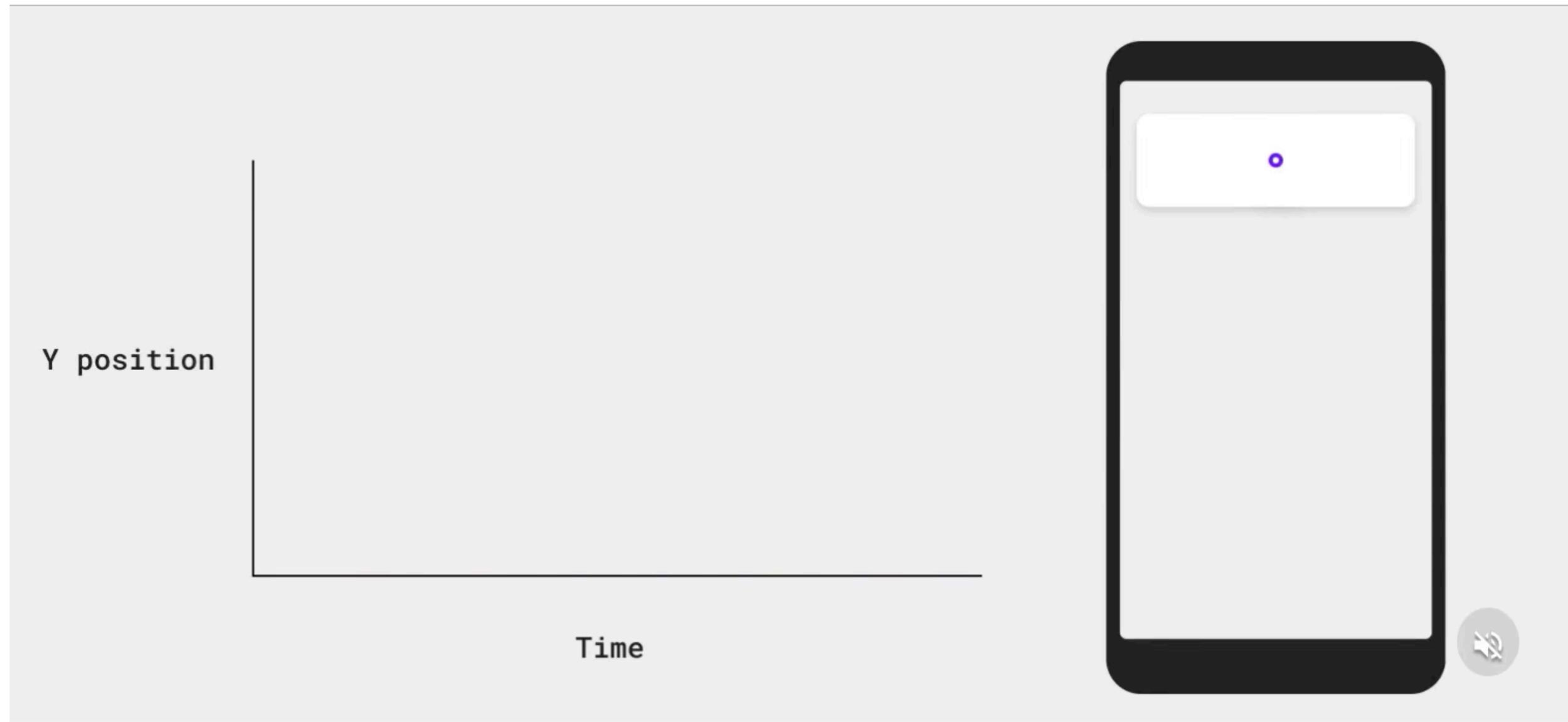
Motion helps users understand how to perform actions.



# Motion

## Speed

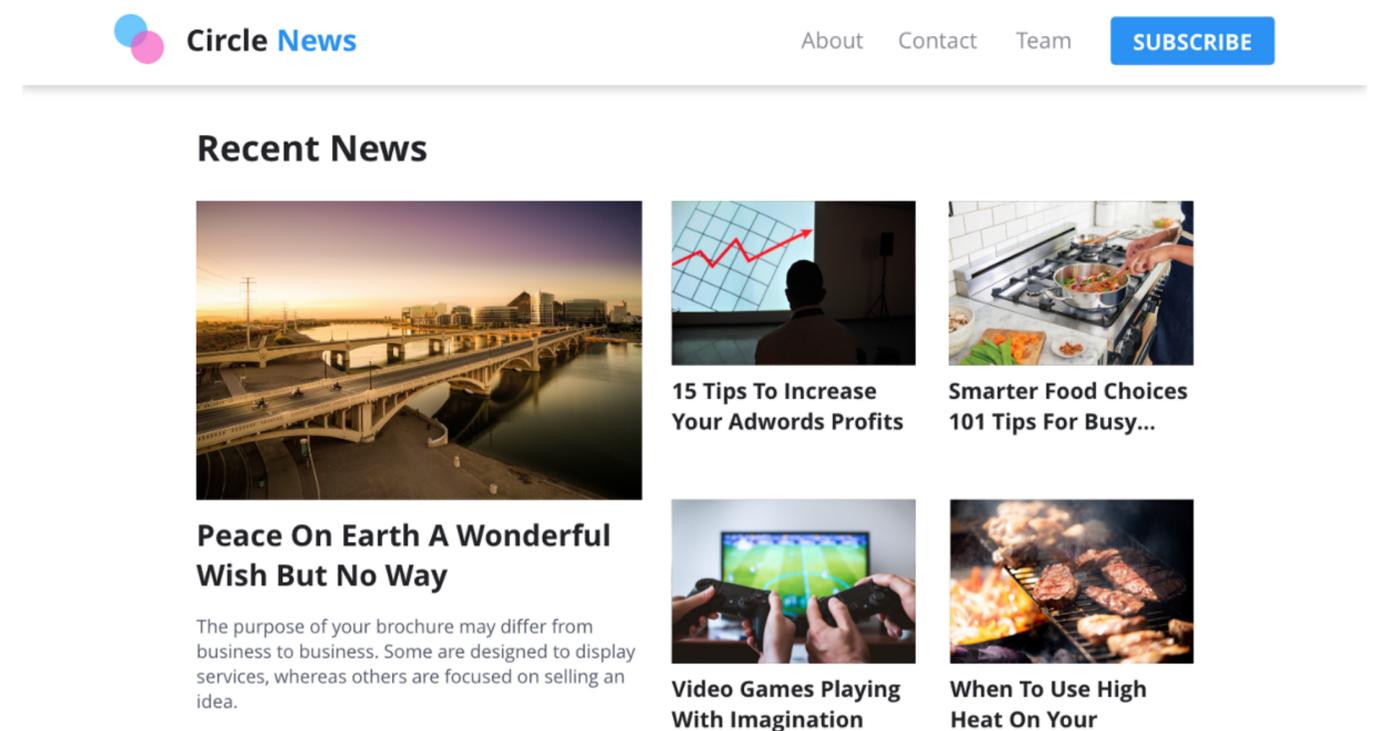
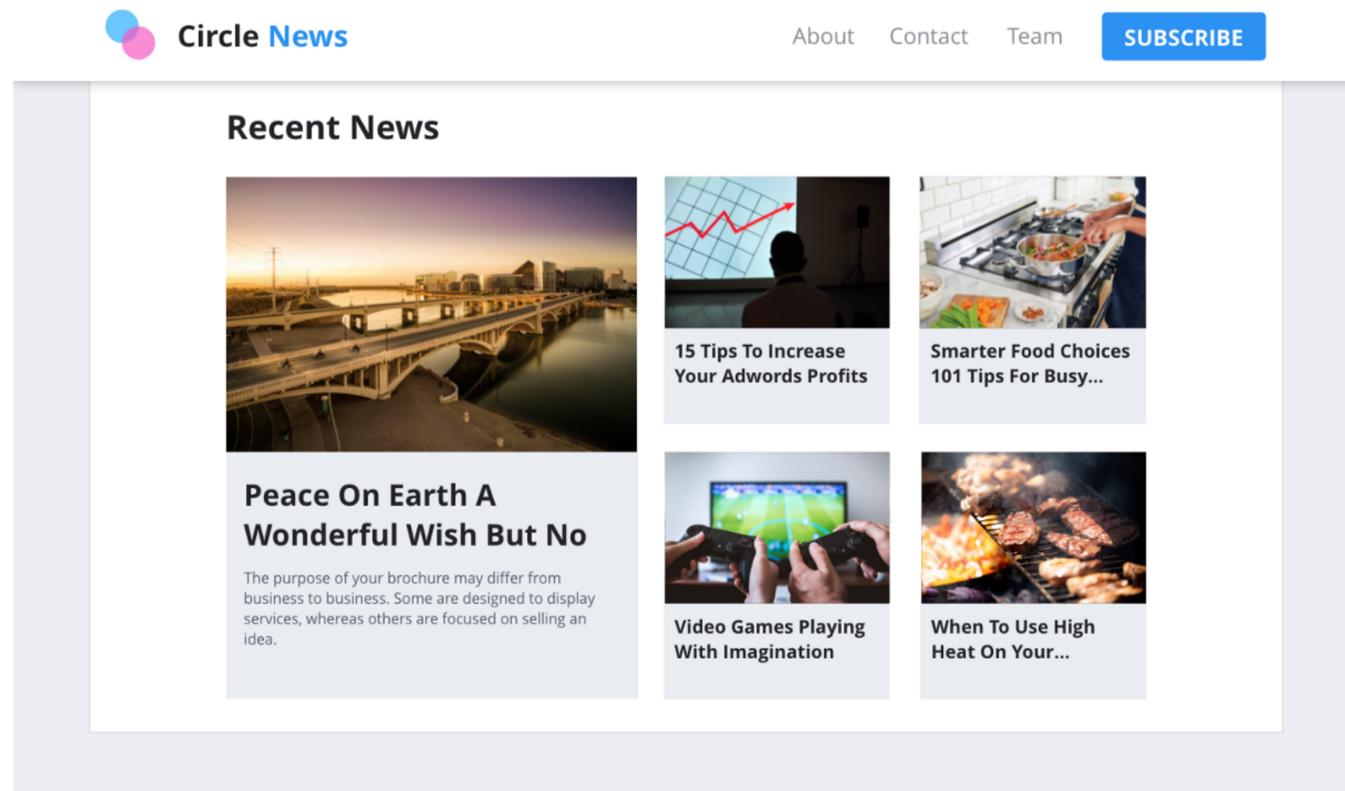
Speed adjustments make transitions smooth and responsive.



Rules

# Remove lines and boxes

When designing, you should take a step back at times and decide whether having containers is cluttering the UI or not. Often, boxes and lines serving to divide content could be replaced with margin.



# Pay attention to contrast

Designing a product is similar to building a public building like a library or a school — it needs to be inclusive to all. That includes blind, color blind, and visually impaired users.

Web Content Accessibility Guidelines (WCAG) requires at least 4.5:1 contrast.

Download Stark which will allow you to check if your designs are accessible or not.



Enter Email Address

✗ Contrast 3.3:1



Enter Email Address

✓ Contrast 4.72:1

# Familiarity is good

There are numerous reasons why certain elements are considered standard.

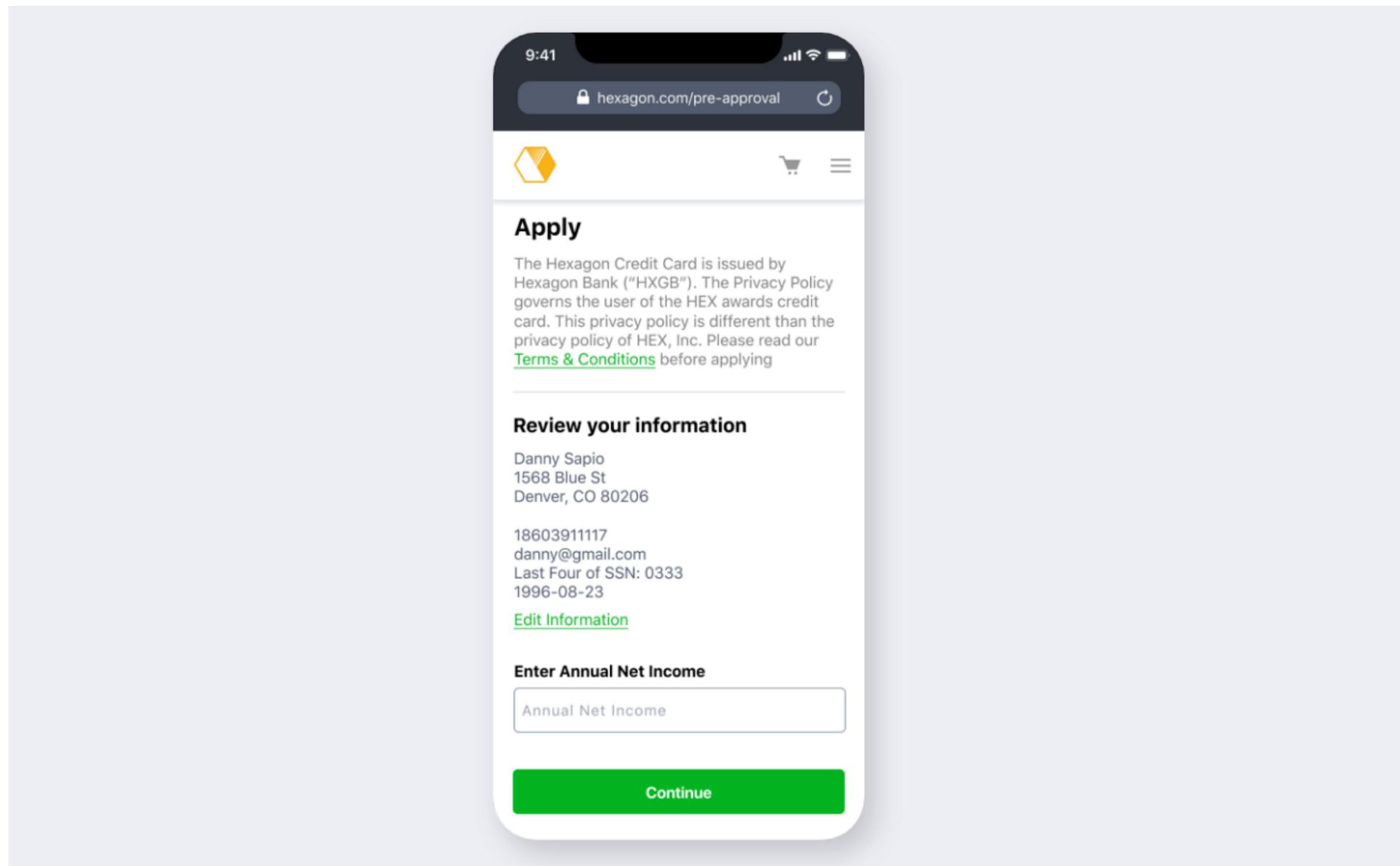
If your website, app, or software functions differently than what users have grown accustomed to, then it won't be intuitive, and they will likely become frustrated with the experience.

For this reason, it's best to be creative only within the confines of the current norms in design. Don't re-invent the wheel.



# Use color weight to establish hierarchy

Every color has a visual weight, which can help us to develop a hierarchy among our content. By using lighter hues of color, we can assign different levels of importance to elements.



# Use color weight to establish hierarchy

The rule of thumb here is that if an element is more important than another, it should be of a higher visual weight. This makes it easy for a user to quickly skim the page and distinguish between the important and less important information.

The bigger, bolder information is what the user's eyes will be drawn to first, and then they will move on to the supporting information below it.

## Capture and share meaningful photographs

A new way to experience photography with this super cool product that I totally didn't just make up for the sake of this mock.

Sign Up

color weight



## Capture and share meaningful photographs

A new way to experience photography with this super cool product that I totally didn't just make up for the sake of this mock.

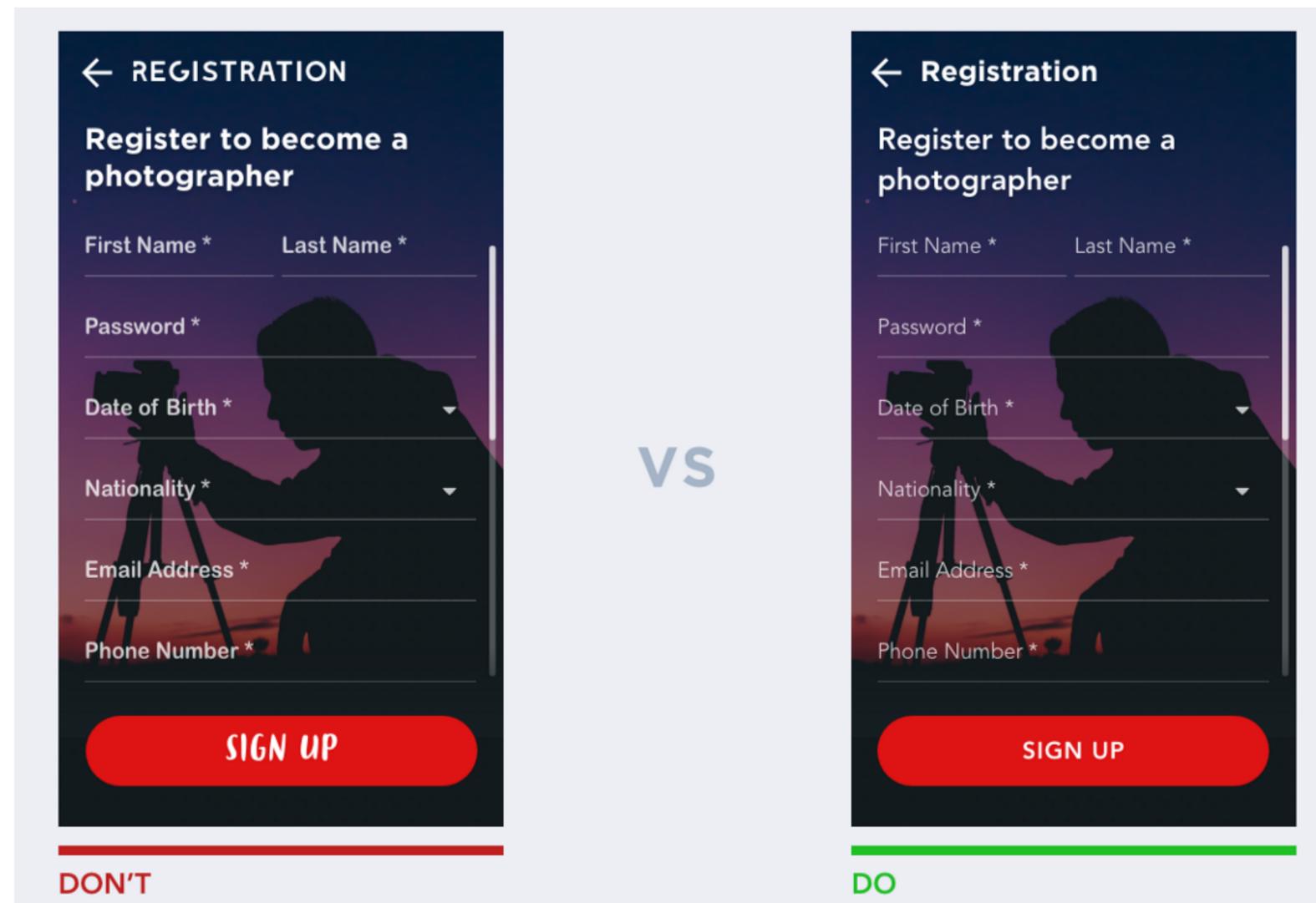
Sign Up

# Avoid using more than two typefaces

A generally accepted design practice is to limit the number of fonts used in an interface. Generally, two different typefaces should be enough. That doesn't mean you can't use more, but unless you have a good reason, it's usually better not to.

The way around this is to use font families.

When selecting a font, find families that have various weights like light, regular etc., as well as styles like condensed, italic etc.



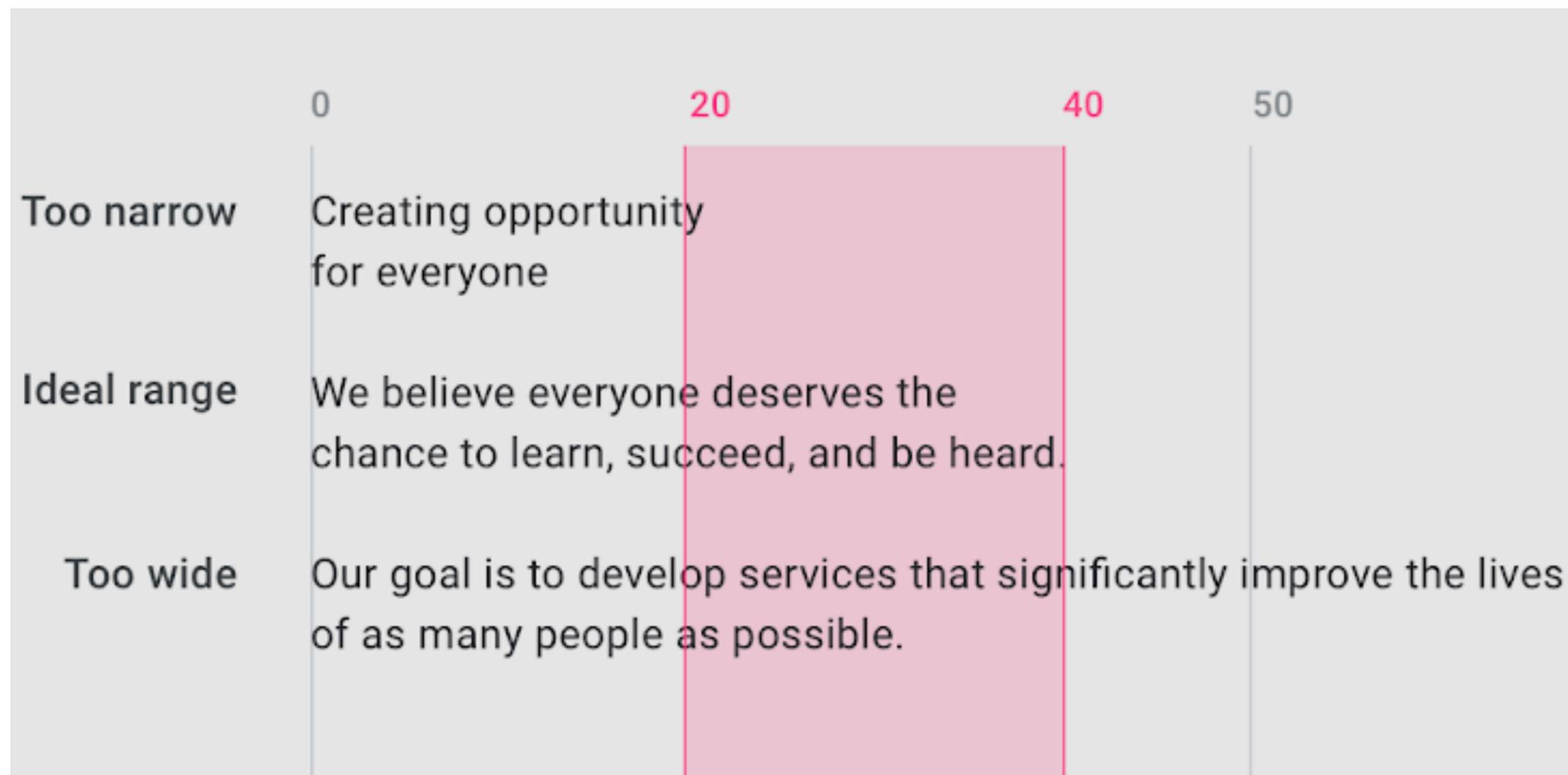
# Line length

The ideal line length is 40-60 characters per line for English body text.

	0	30	40	60	90
<b>Too narrow</b>	Tokyo, Japan's busy capital, mixes the ultramodern and the traditional, from neon-lit skyscrapers to historic temples. The opulent Meiji Shinto Shrine is known for its towering gate and surrounding woods.				
<b>Ideal range</b>	Tokyo, Japan's busy capital, mixes the ultramodern and the traditional, from neon-lit skyscrapers to historic temples. The opulent Meiji Shinto Shrine is known for its towering gate and surrounding woods.				
<b>A little wide</b>	Tokyo, Japan's busy capital, mixes the ultramodern and the traditional, from neon-lit skyscrapers to historic temples. The opulent Meiji Shinto Shrine is known for its towering gate and surrounding woods.				
<b>Too wide</b>	Tokyo, Japan's busy capital, mixes the ultramodern and the traditional, from neon-lit skyscrapers to historic temples. The opulent Meiji Shinto Shrine is known for its towering gate and surrounding woods.				

# Line length

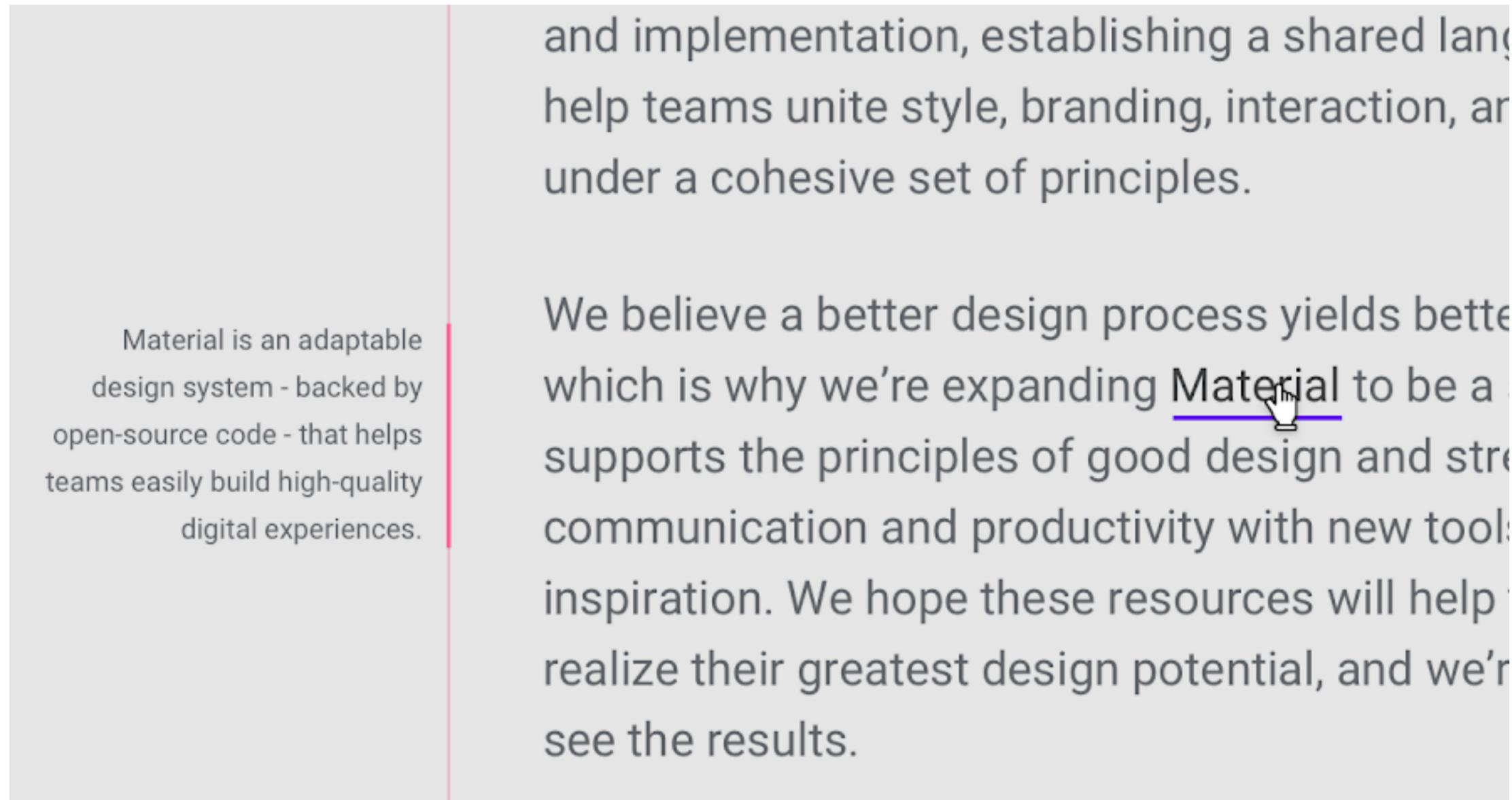
The ideal line length for short lines of English text is 20-40 characters per line.



# Right-aligned

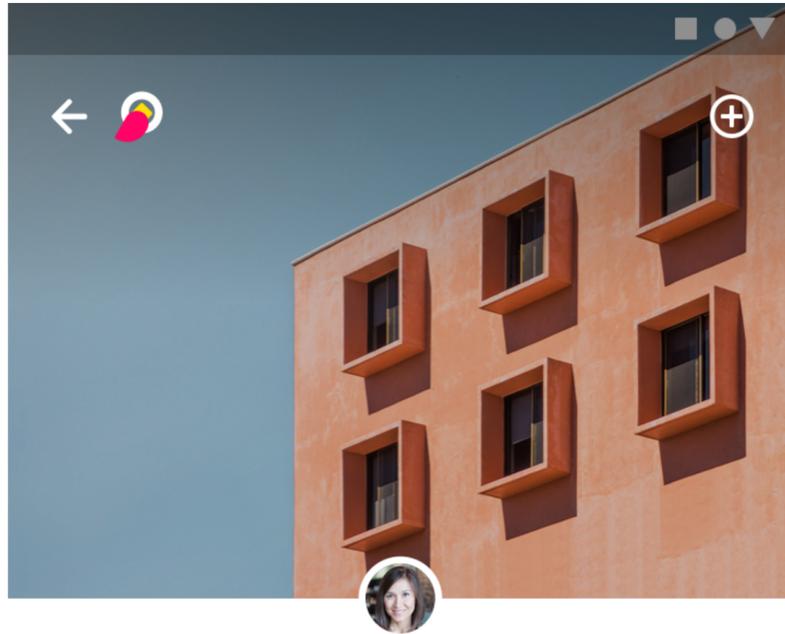
Right-aligned text is the most common setting for right-to-left languages, such as Arabic and Hebrew.

Left-to-right languages can use right-aligned text, though it is best for distinguishing short typographic elements within a layout (such as side notes), and is not recommended for long copy.



# Colour system

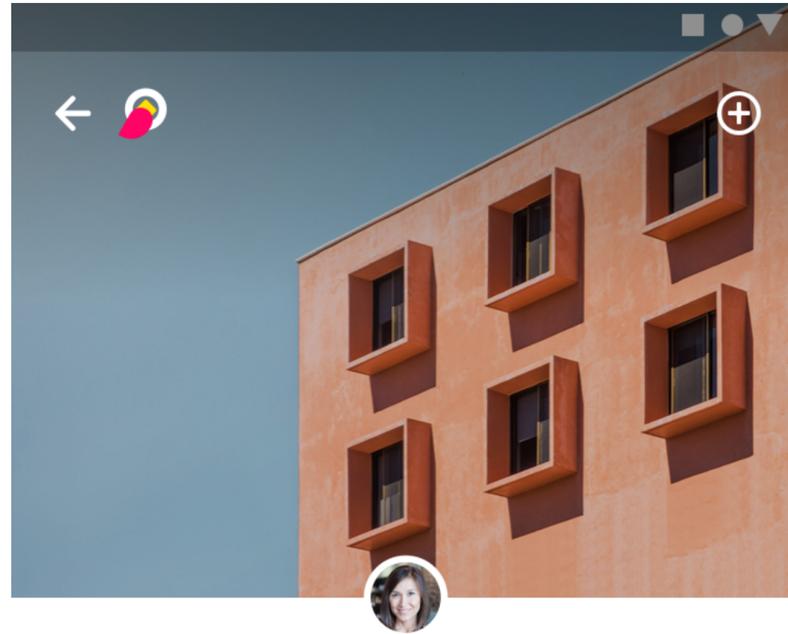
Avoid using bright primary or secondary colors for body text.



PHOTOGRAPHY

## Monuments, Buildings, and Other Structures

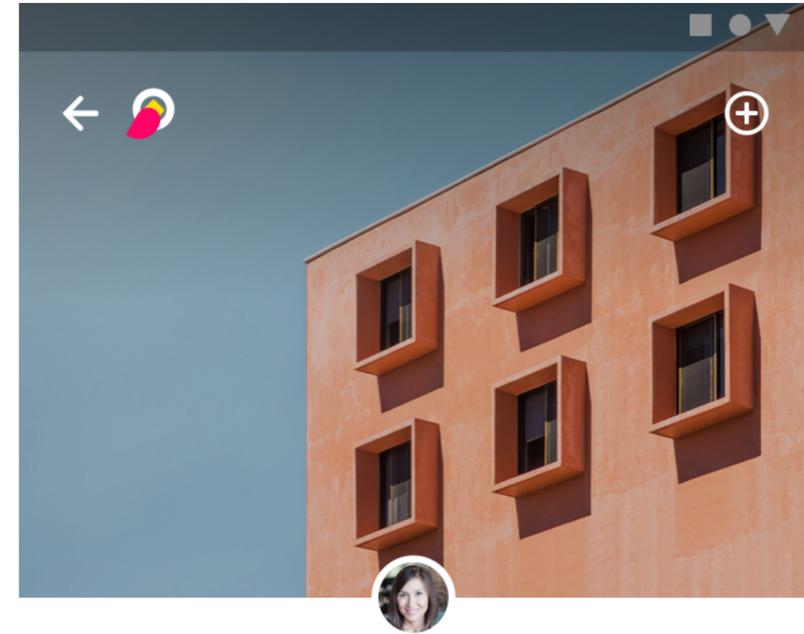
This video course introduces the photography of structures, including urban and rural buildings, monuments, and less traditional structures. Instruction includes the handling of equipment and methods used to



PHOTOGRAPHY

## Monuments, Buildings, and Other Structures

This video course introduces the [photography](#) of structures, including urban and rural buildings, monuments, and less traditional structures. Instruction includes the handling of equipment and methods used to



PHOTOGRAPHY

## Monuments, Buildings, And Other Structures

This video course introduces the photography of architected structures, including urban and rural buildings, monuments, and less traditional structures. Instruction includes the handling of equipment and metho

# Microinteractions

Why Microinteractions are Important for UX

User System

Microinteraction

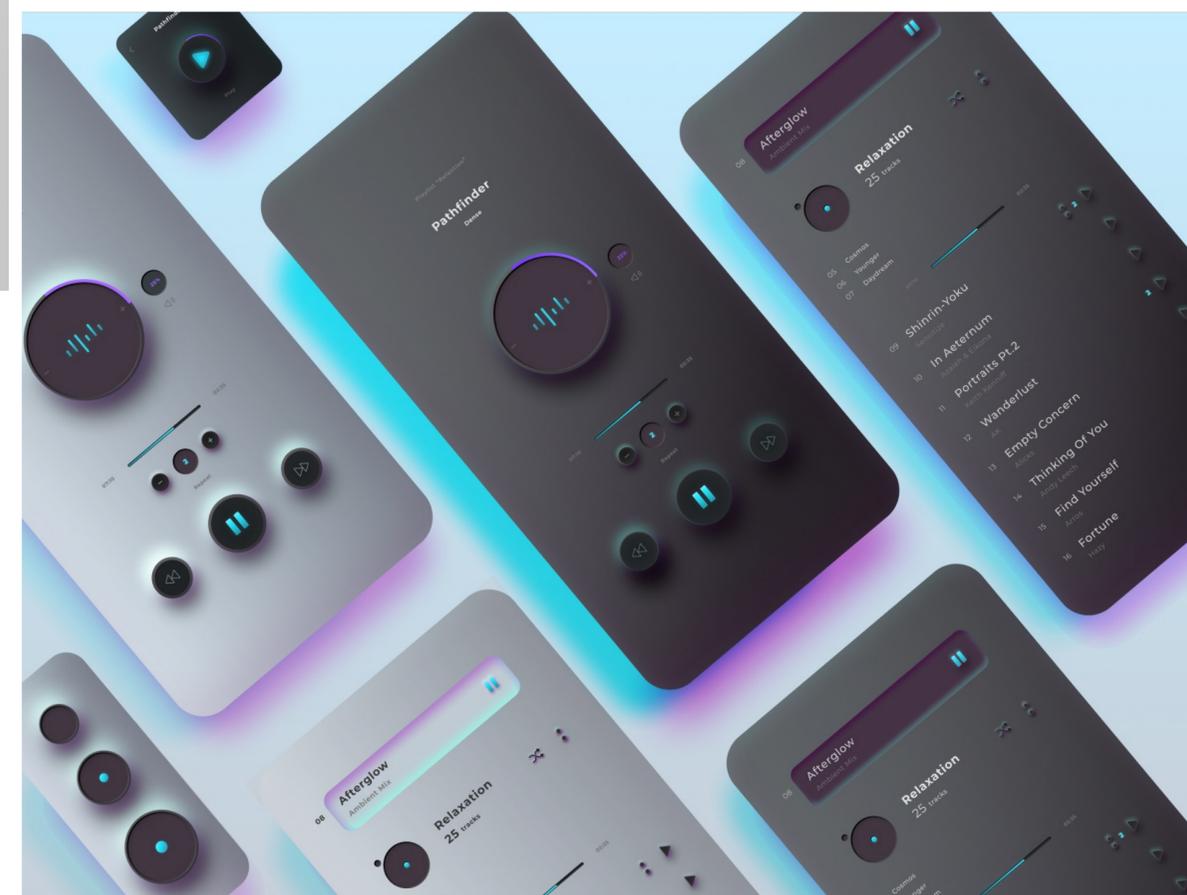
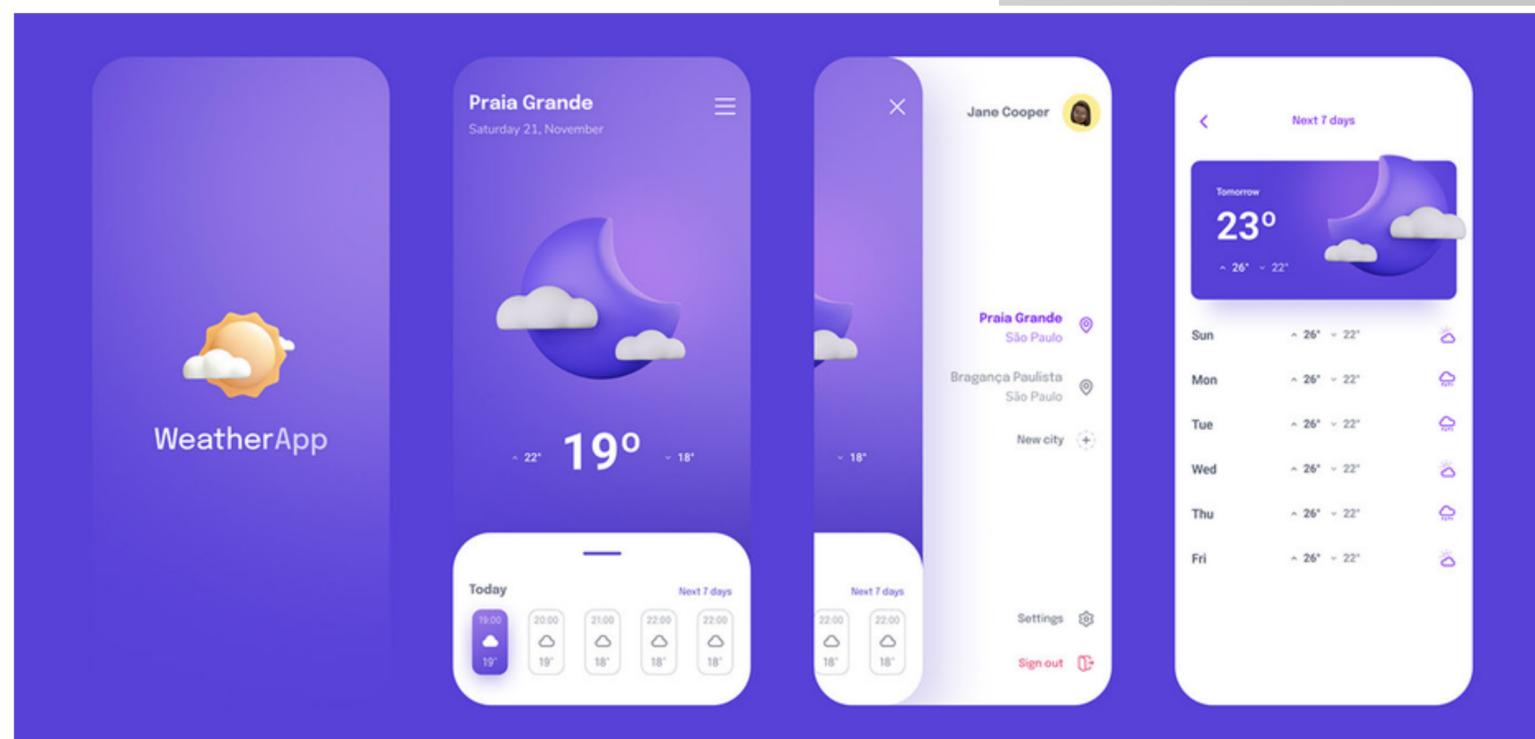
0:32 / 2:49

Video player controls including play, volume, and HD icons.

# App Design Trends 2021

# I. Neumorphism

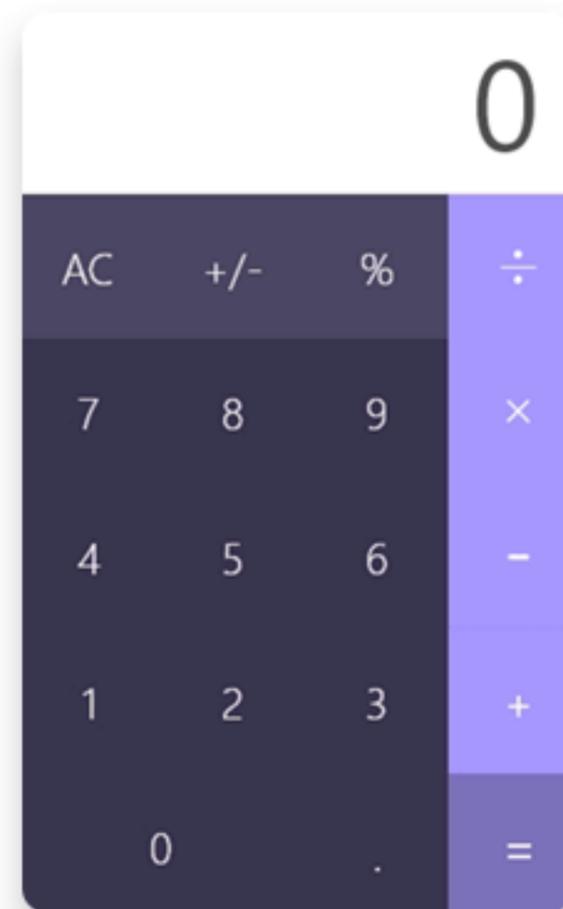
With neumorphism, flat icons and buttons are made much more dimensional. The cartoon-like simplicity of flat design remains, but is supplemented with striking realism, making them literally jump off the screen. Not quite as photorealistic, but much more lifelike and tactile.



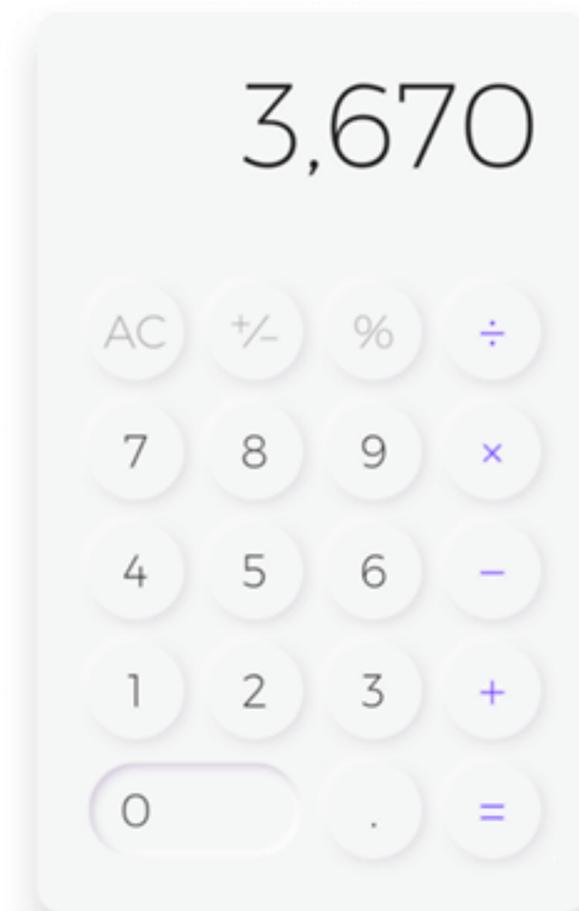
# Skeuomorphism vs. Flat Design vs. Neumorphism



SKEUOMORPHISM



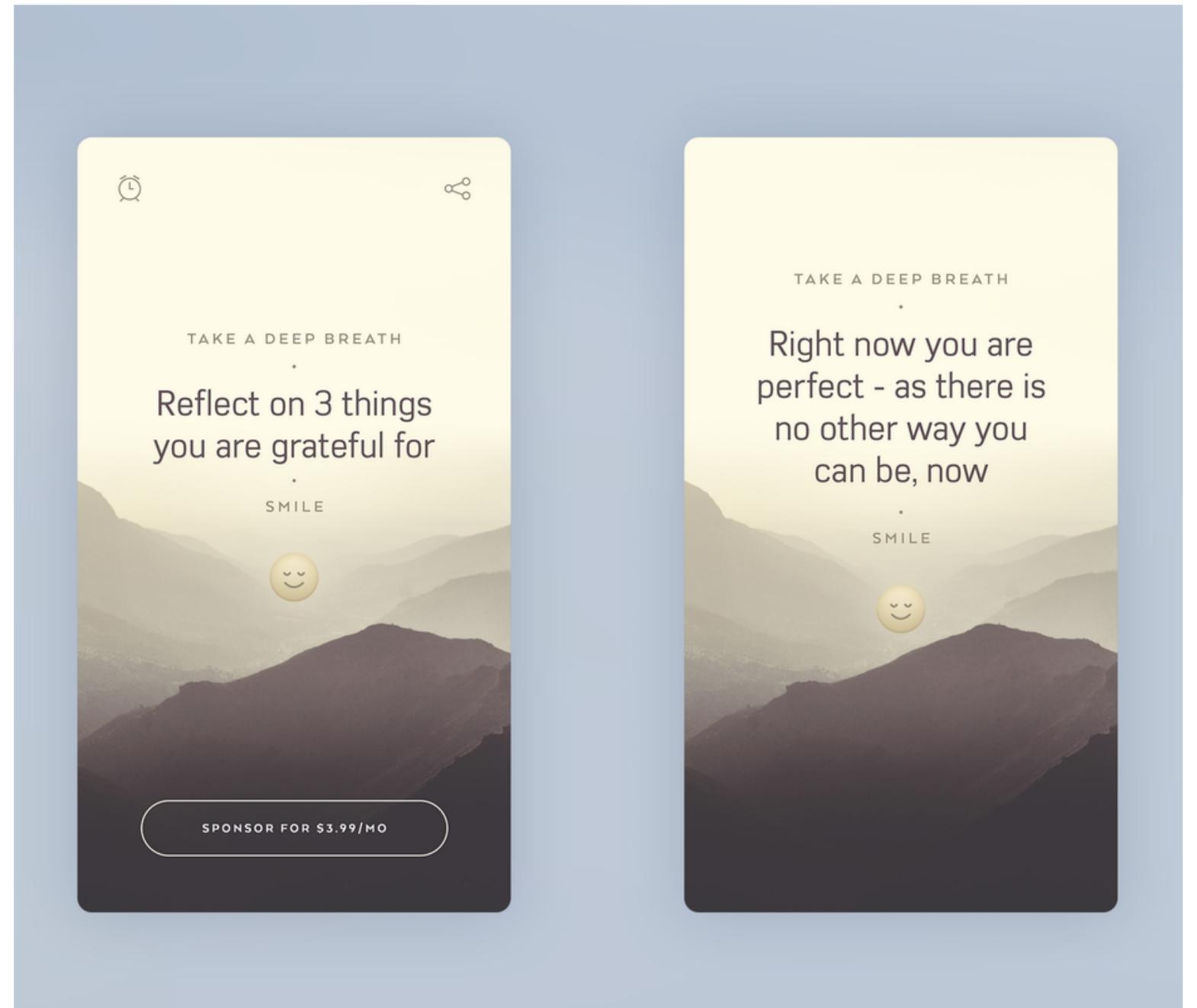
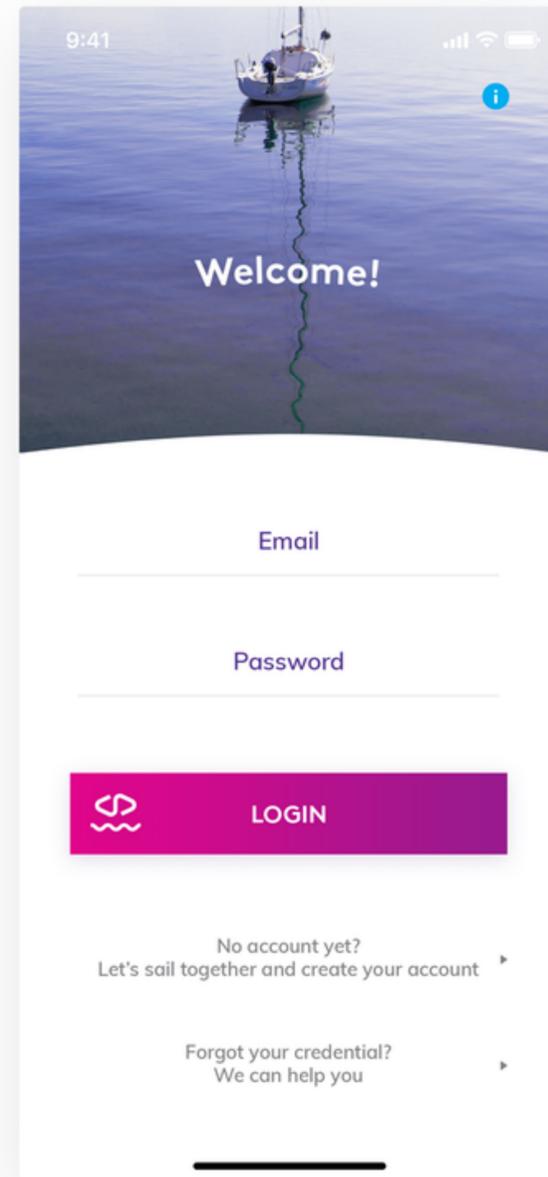
FLAT DESIGN



NEUMORPHISM

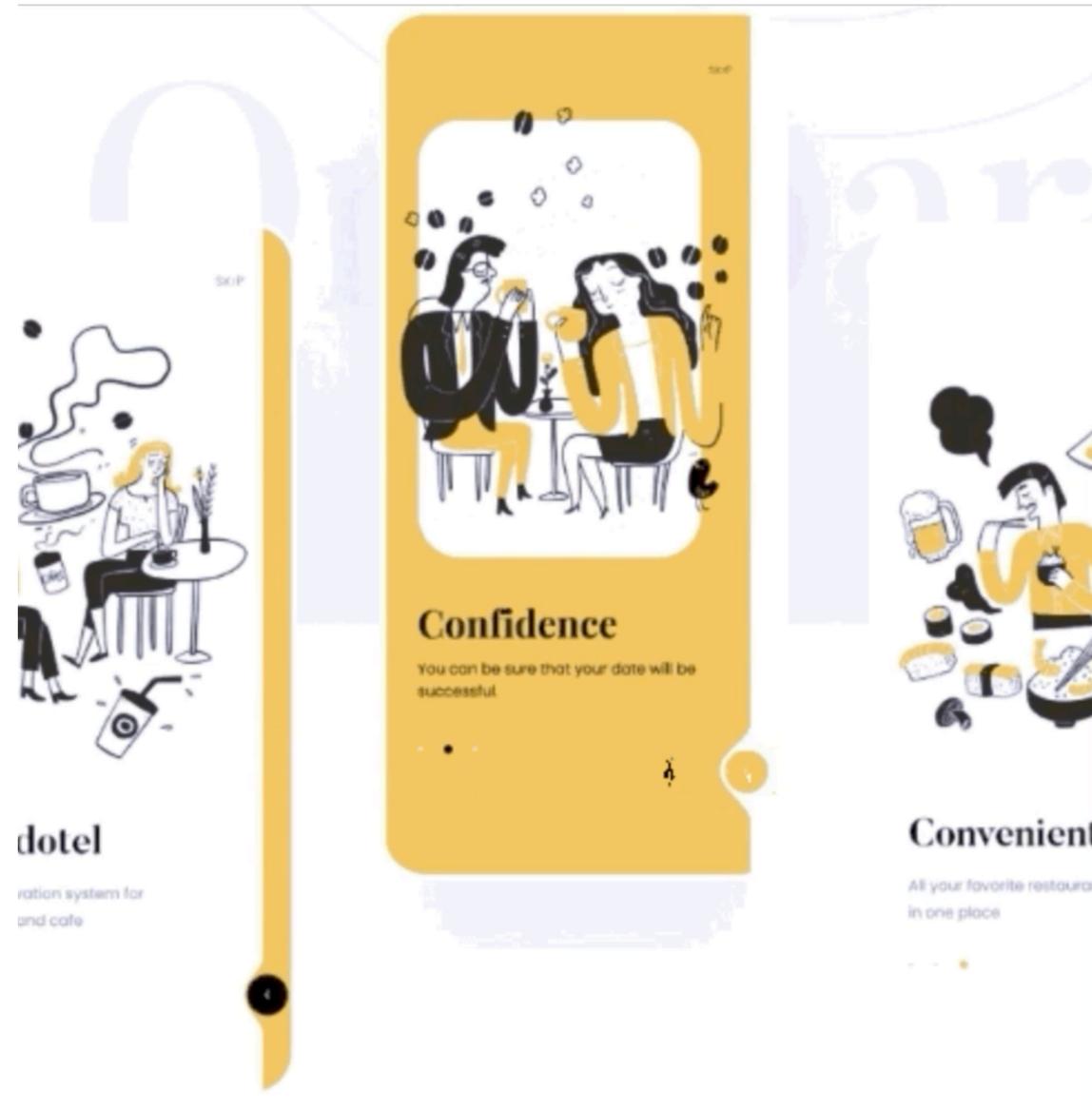
## 2. Pictures that are easier on the eyes

These app designs use calming, natural colors and simple layouts that do not overwhelm the user and allow them to look at the screen for long periods of time without being uncomfortable.



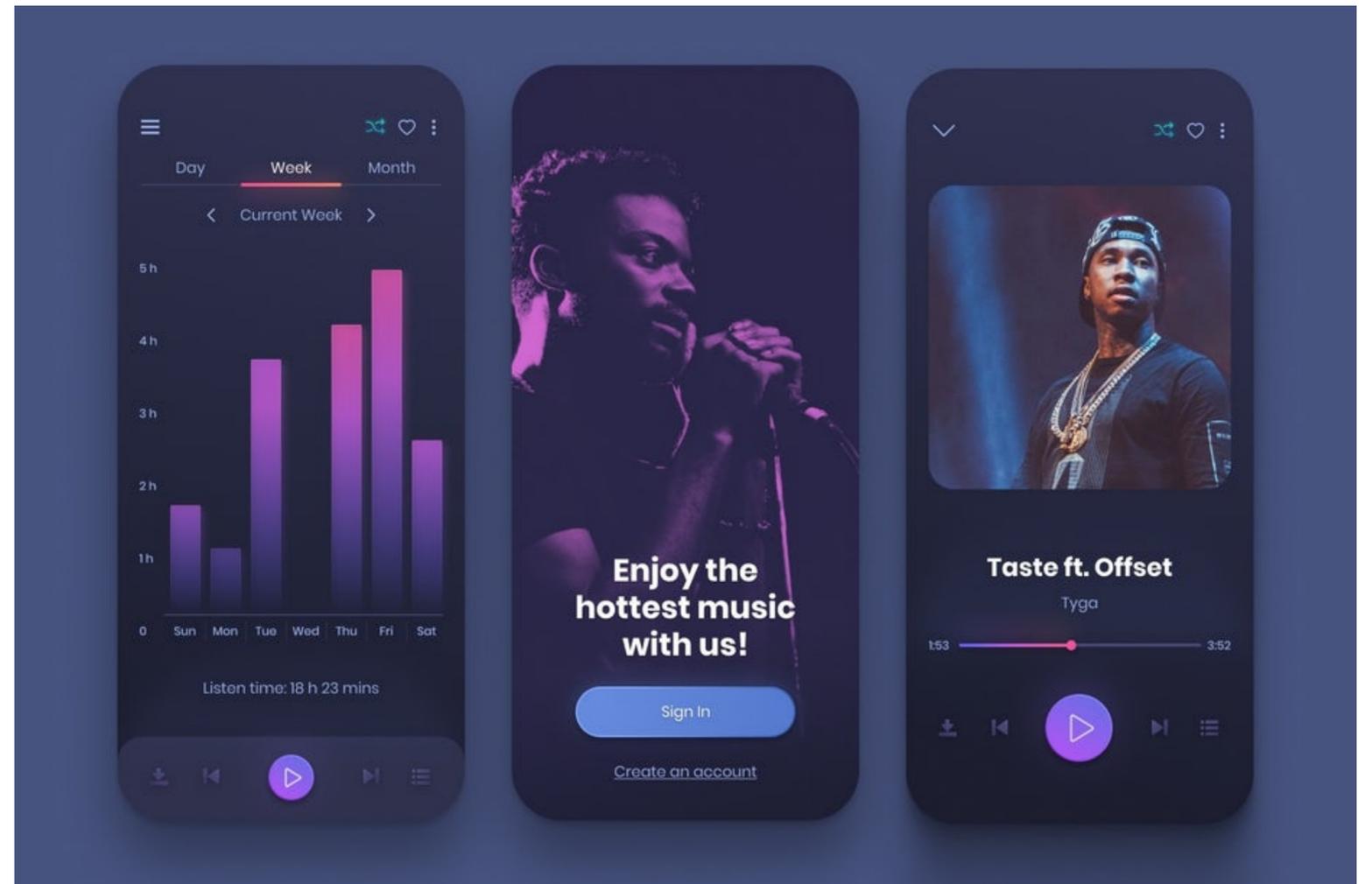
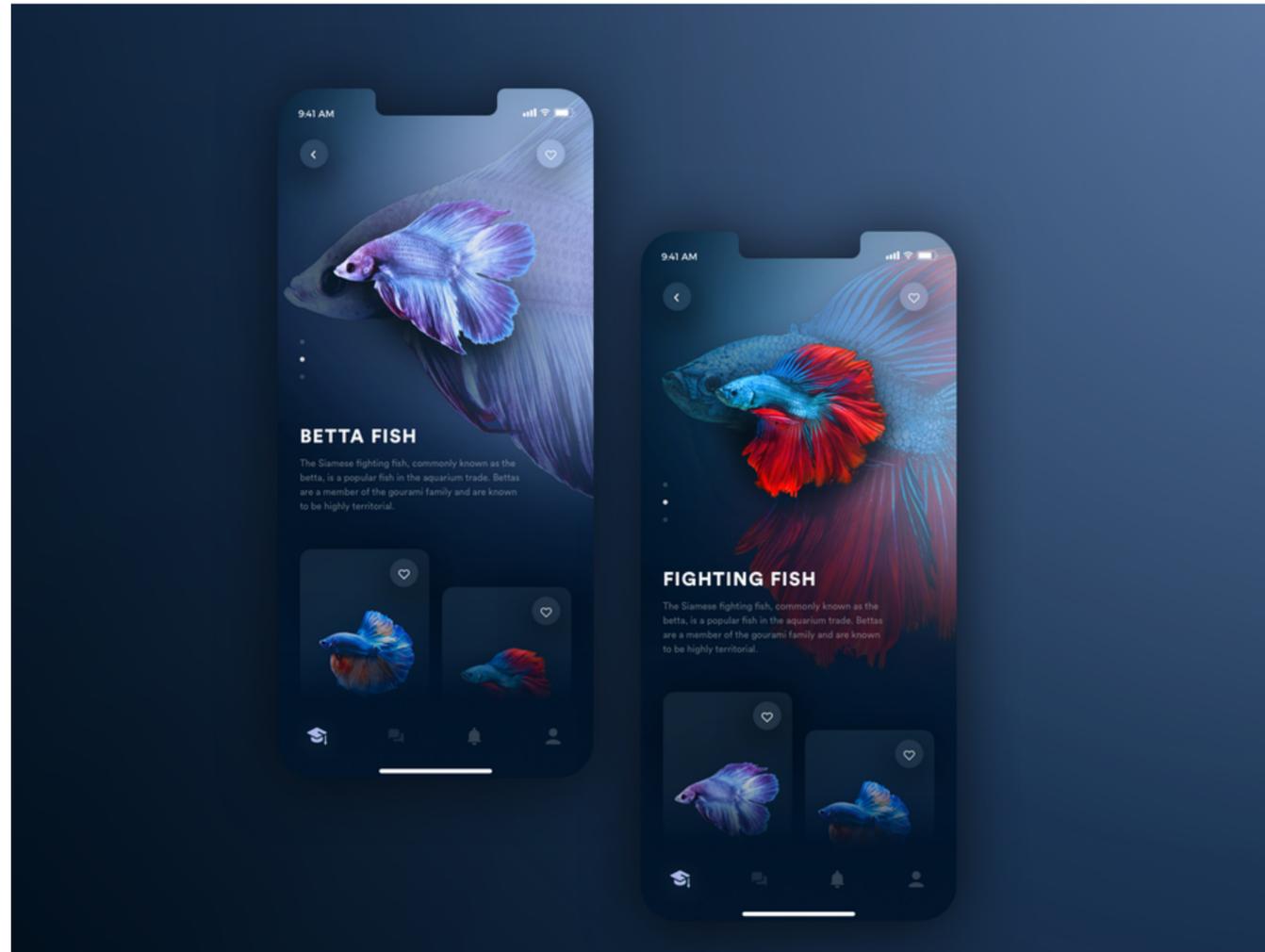
# 3. Attractive swiping experience

While clicking is quick and easy, swiping is just more fun!



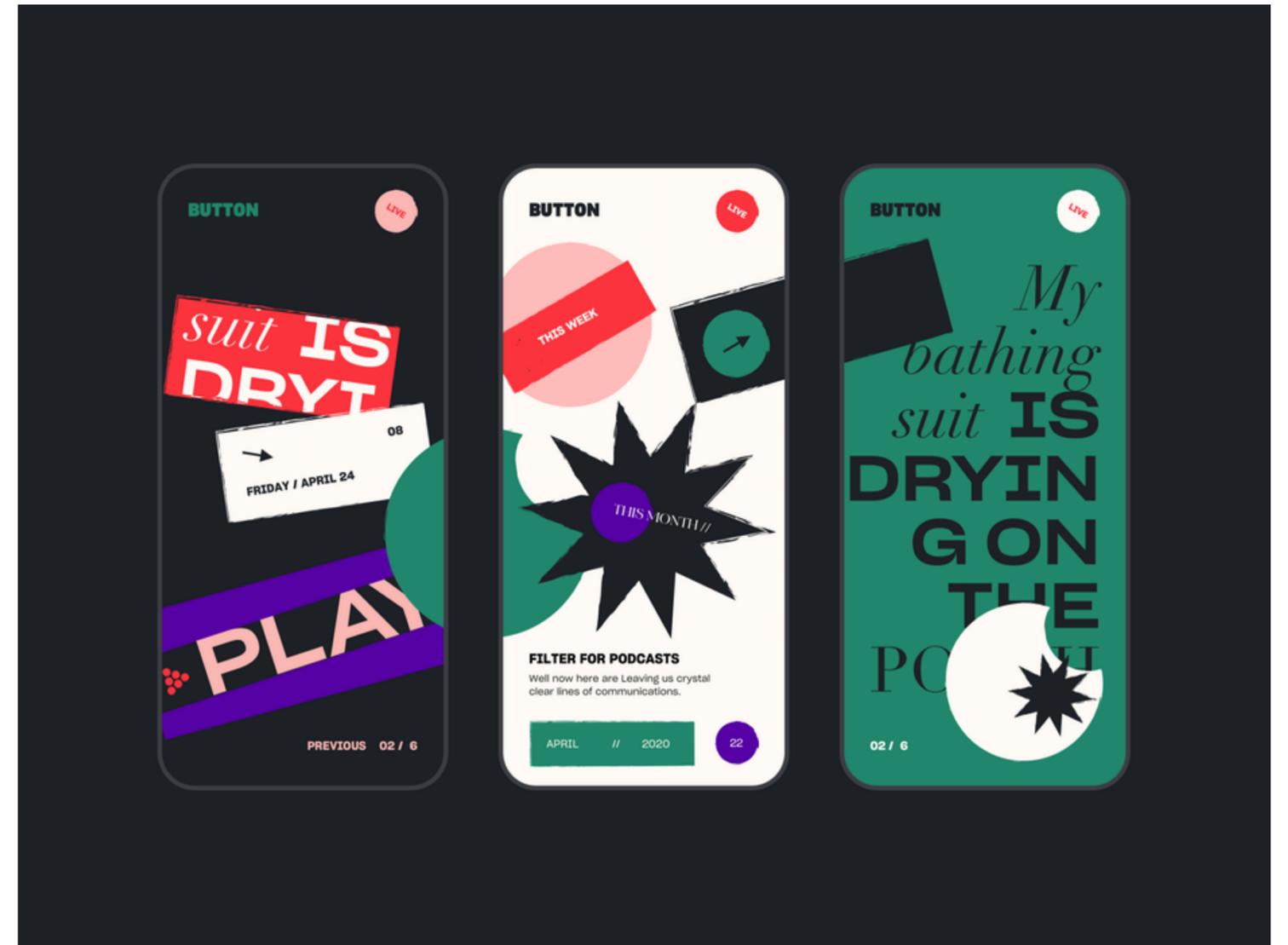
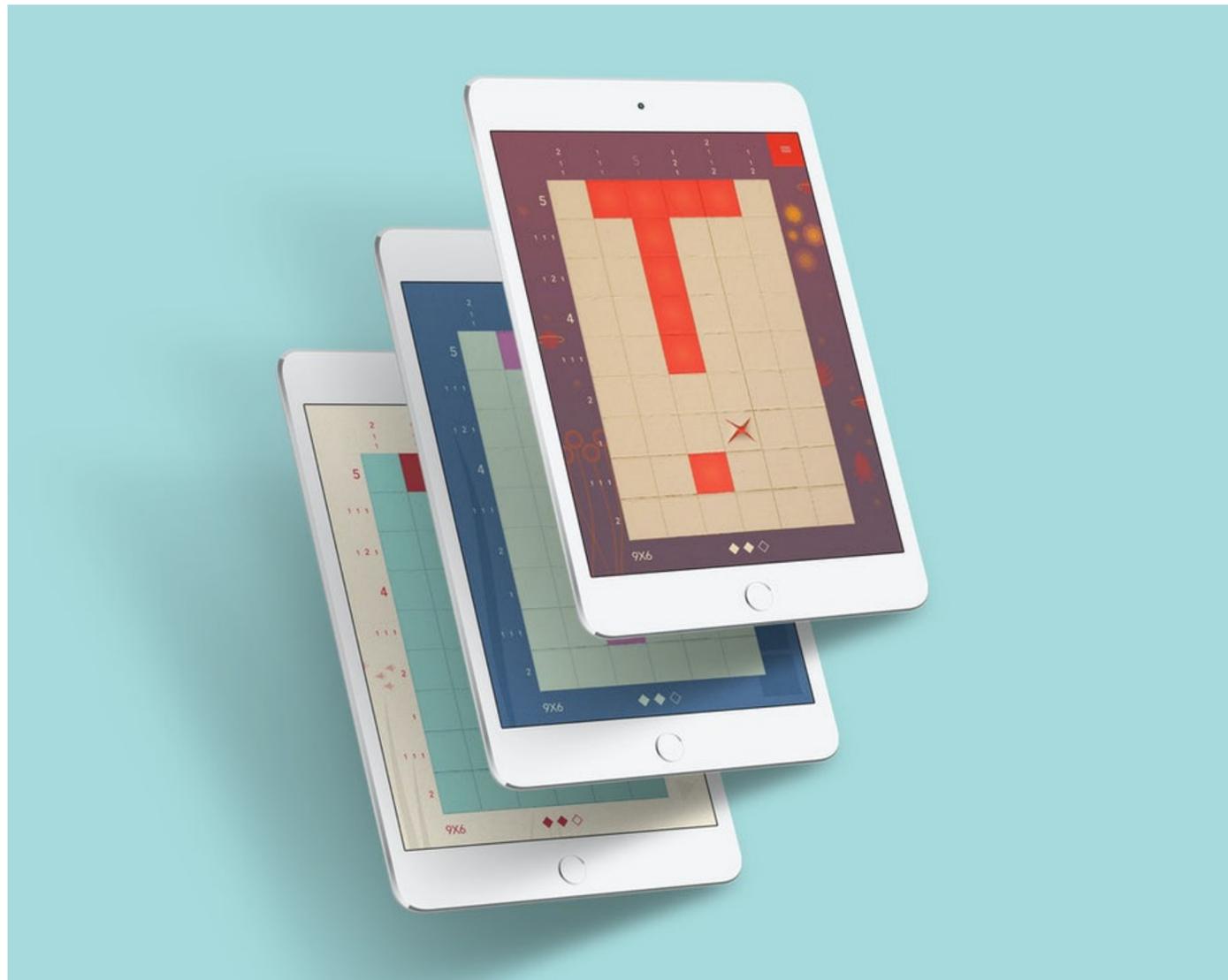
# 4. Depth through shadows and layering

Shadows and layering are one way of creating the strong depth effect.



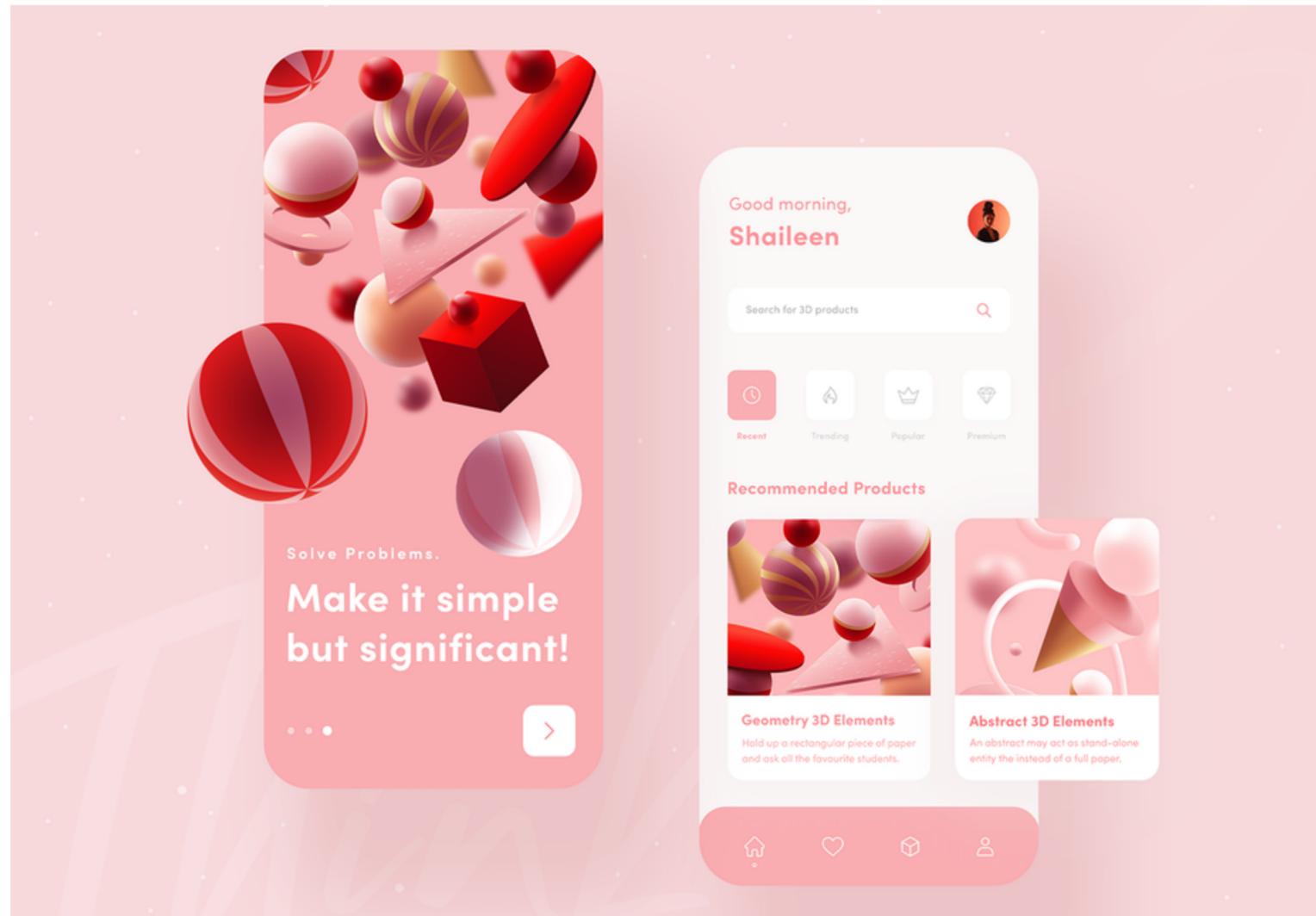
# 5. Analog inspiration

Paper and cardboard textures, layouts reminiscent of collages, slightly yellowish backgrounds instead of pure white, and retro-style typographies and button designs.



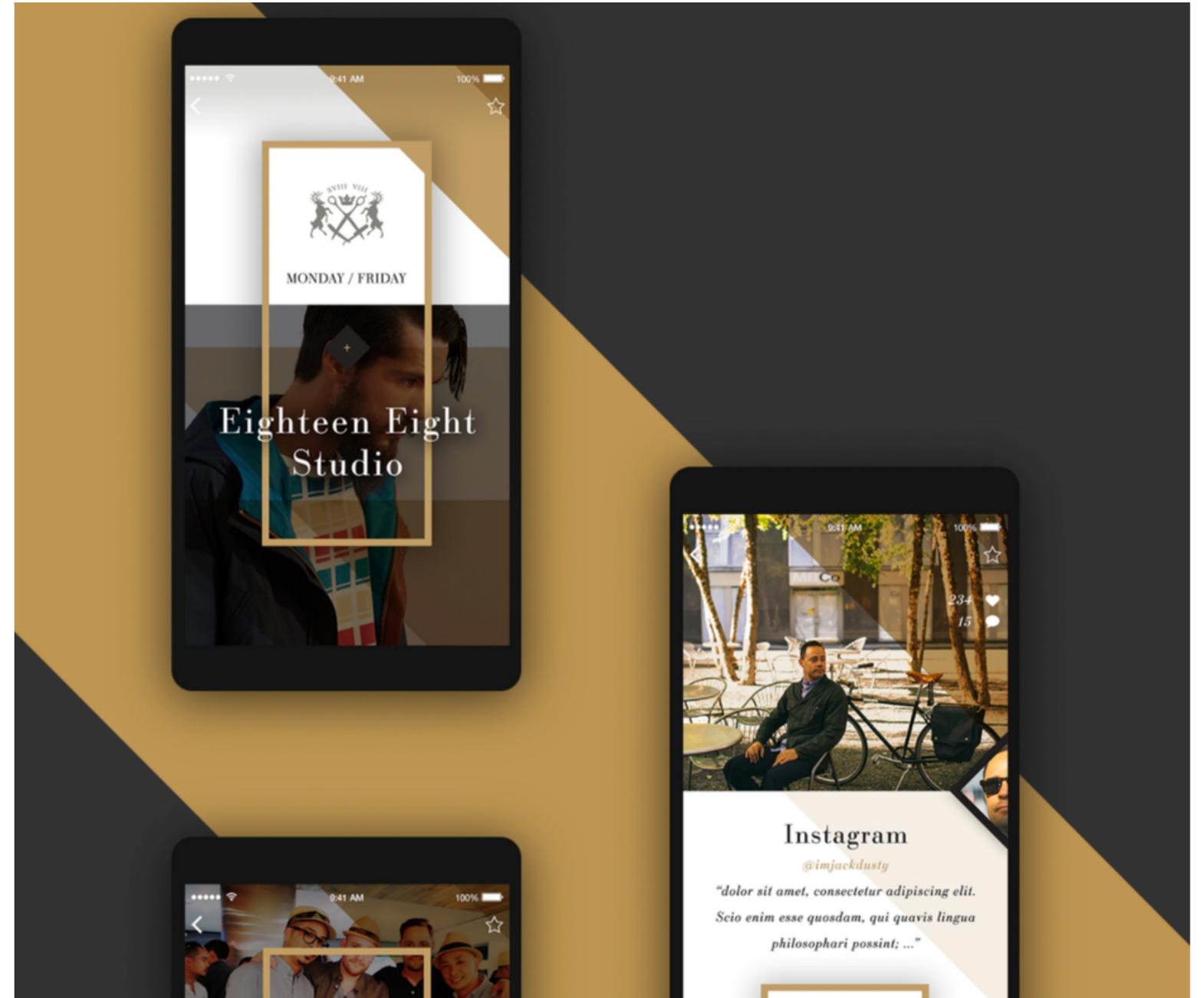
# 6. Abstract and geometric art

This app design trend strikes a fine balance between intricate detail and simplicity, and contains plenty of variety and artistry.



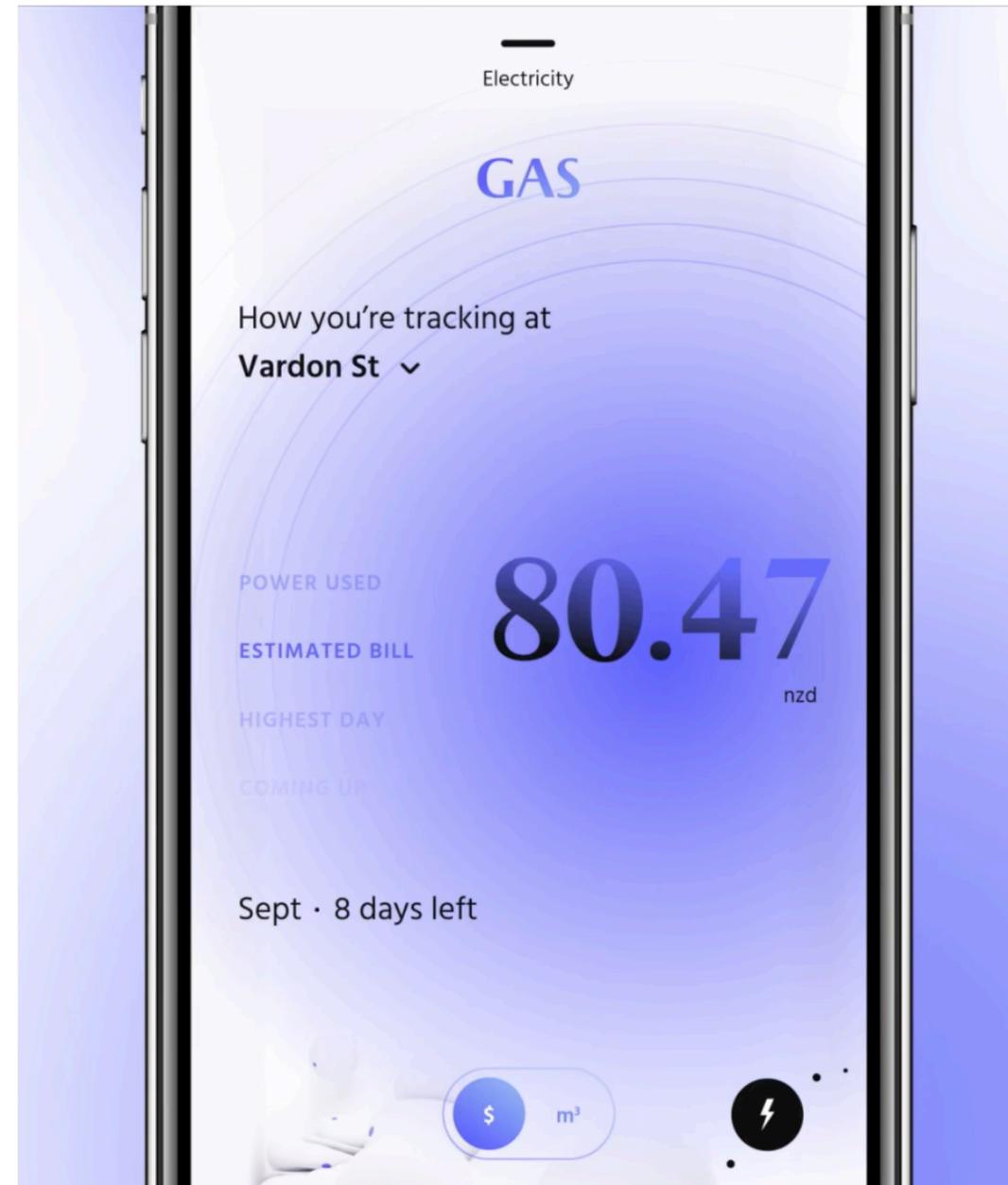
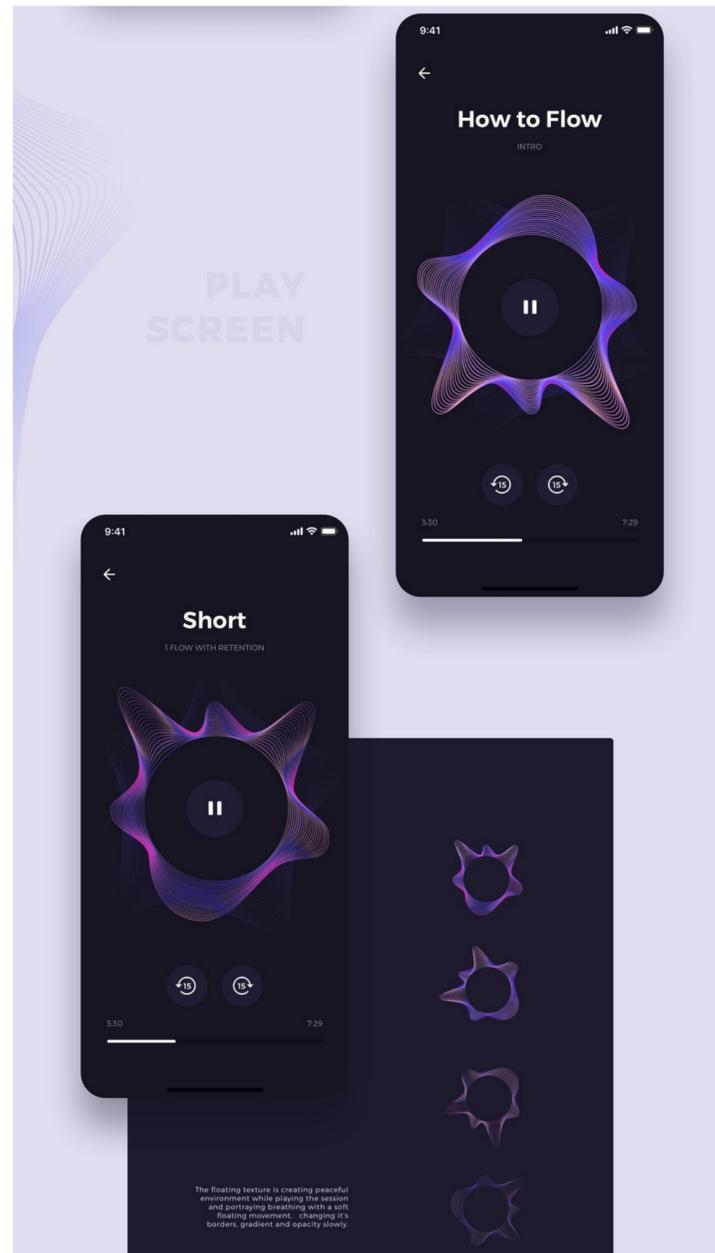
# 7. Unusual angles

Unusual angles make app designs more interesting and even more dynamic. The result is an app design trend that feels exploratory, playful, and a bit rebellious.



# 8. Creative data visualization

Unusual charts, animations, and colors that correlate with your data can make it more stimulating and provide users with information in a more engaging way. Wave patterns, for example, are a popular choice as they have an intriguing and hypnotic effect that is pleasant to look at.



# Mood Board

# Mood Board

Graphic designers, interior designers, as well as UI/UX designers often use mood boards to convince clients of the look and style they're going for. This is because mood boards make it easy to instantly communicate the ideas and inspiration behind a future design.



# Mood Board

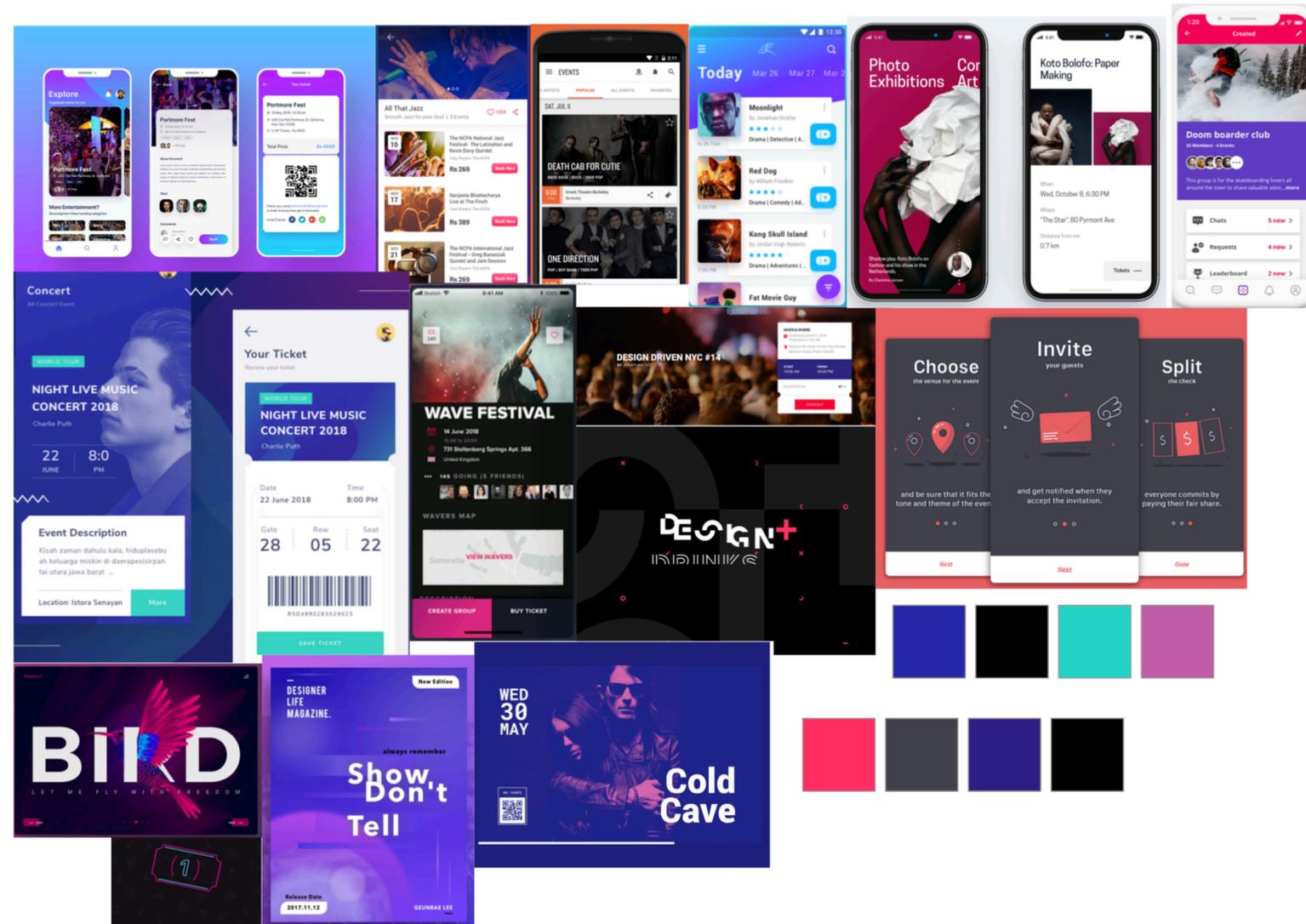
Graphic designers, interior designers, as well as UI/UX designers often use mood boards to convince clients of the look and style they're going for. This is because mood boards make it easy to instantly communicate the ideas and inspiration behind a future design.

Mood boards generally contain a collage of the following elements:

- Color palette
- Patterns
- Fonts
- Images
- Shapes
- Graphics

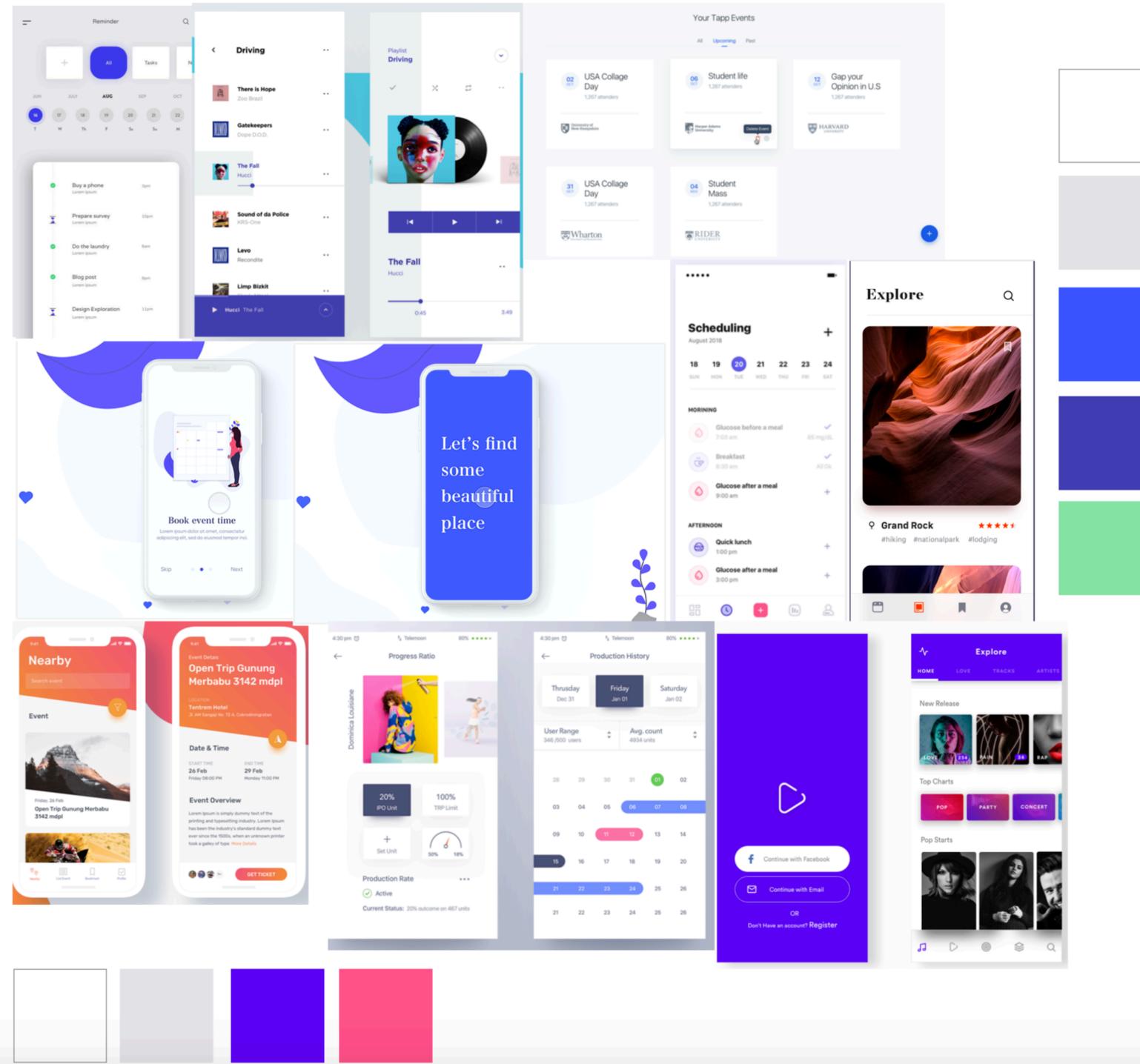
# Mood Board

Colorful  
hype  
active  
alive  
gradient  
cool

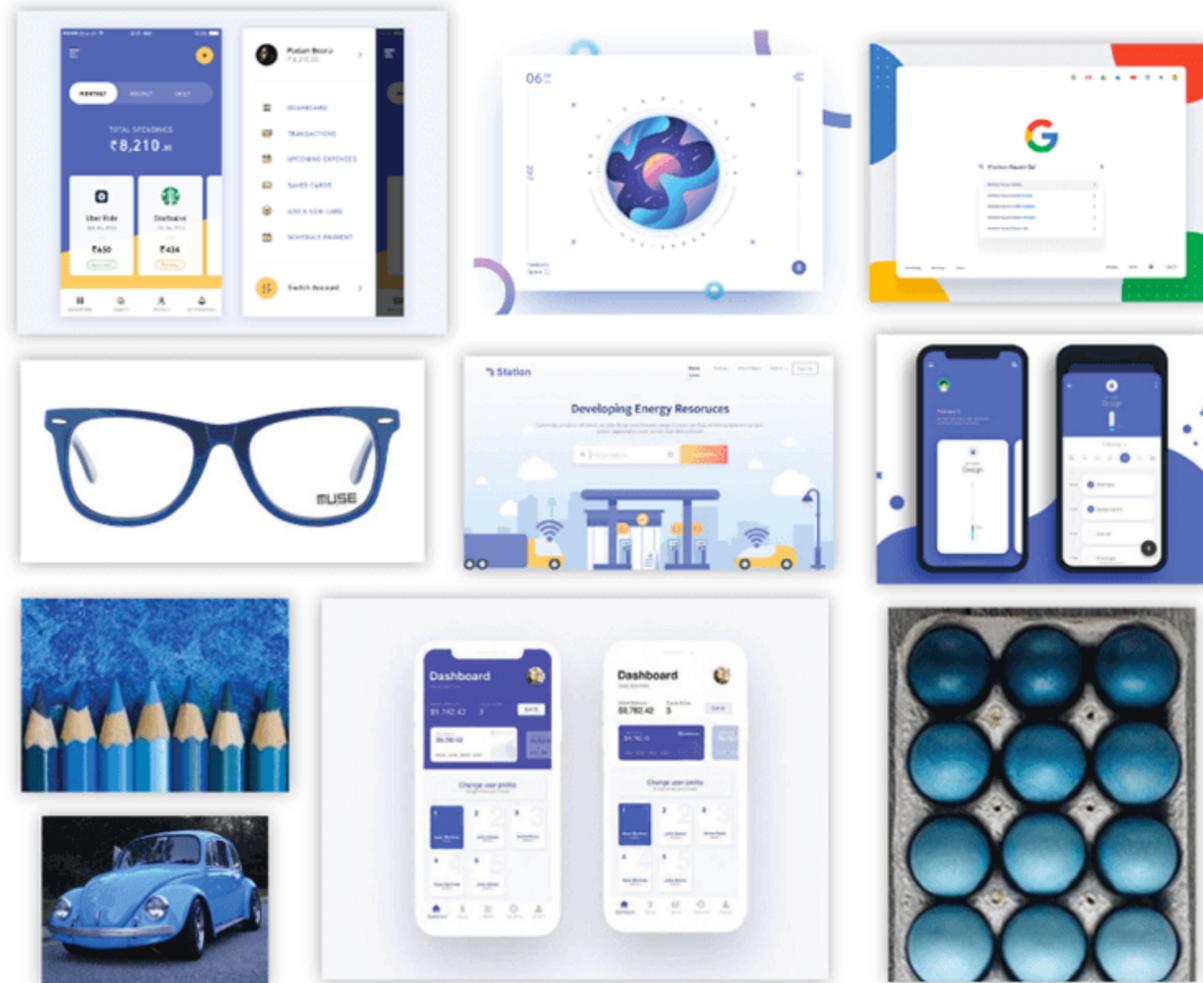


# Mood Board

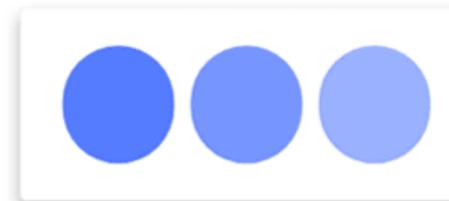
Minimal  
Simple  
Clean  
Refreshing



# Mood Board



Primary Colour



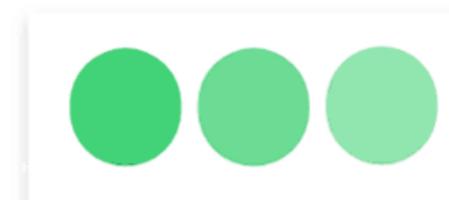
Azure - Blue  
#5680F9

Secondary Colour



#4C36DD

Success Colour



#5680F9

Failure Colour



#5680F9