

Class 15: Interactive Web Application Design Patterns

- Review: Last Class
- Design Patterns
- Interactive Web Application Design Patterns
- Key Design Principles

Review

Review: Primary Database Operations

Create - Insert new documents into a collection.

Read - Query and retrieve documents from a collection.

Update - Modify existing documents in a collection.

Delete - Remove documents from a collection.

```
// Find all documents that are not "Galaxy"  
db.space.find({ name: { $ne: "Galaxy" } })
```

Project 2: Community Events SPA

For your second project you will design and implement an interactive **community events** single-page application using the MERN stack. For this project, you may only use the methods taught in this course.

The idea for this project to encourage community engagement by providing a platform for community members to discover and participate in local events. However, community engagement is not a strict requirement for this project. You may create an events web application for any type of events you like regardless of whether it promotes community engagement.

Design Patterns

Interactive Web Applications

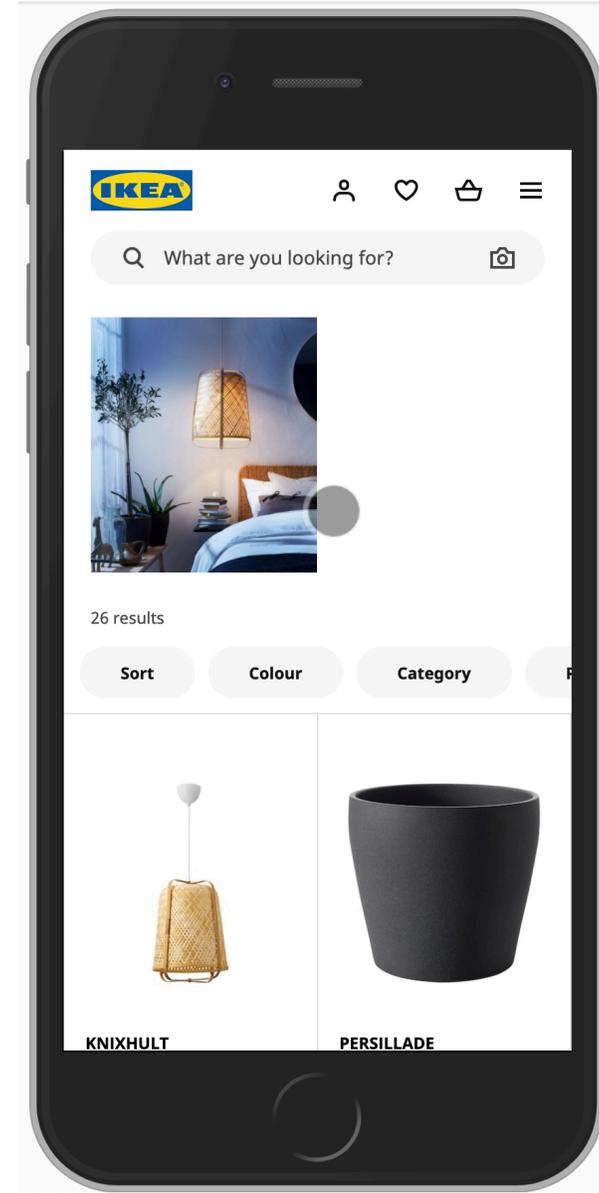
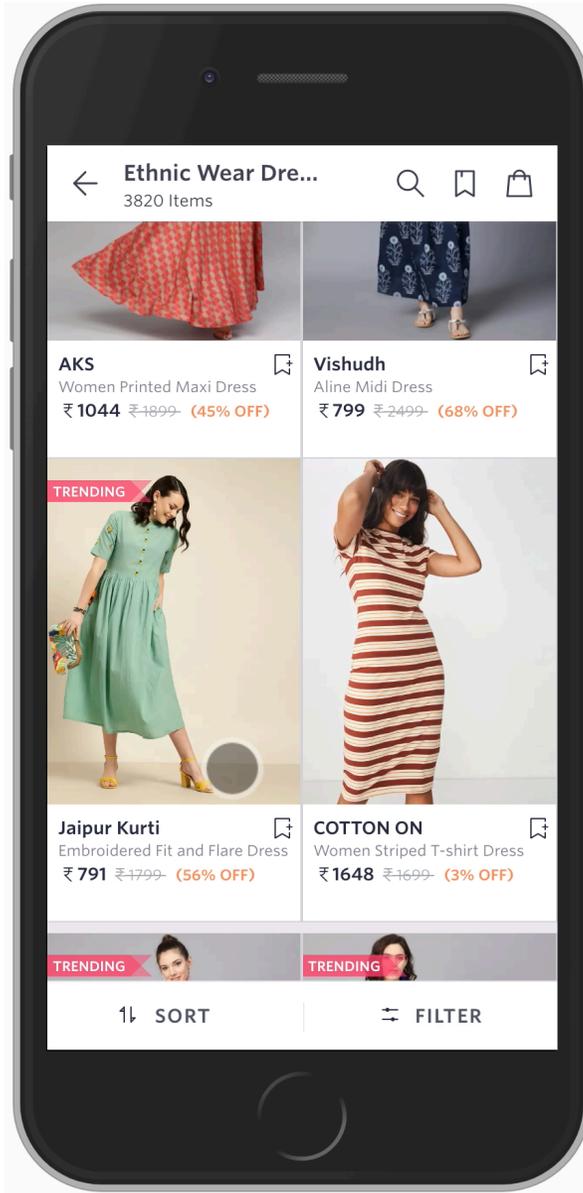
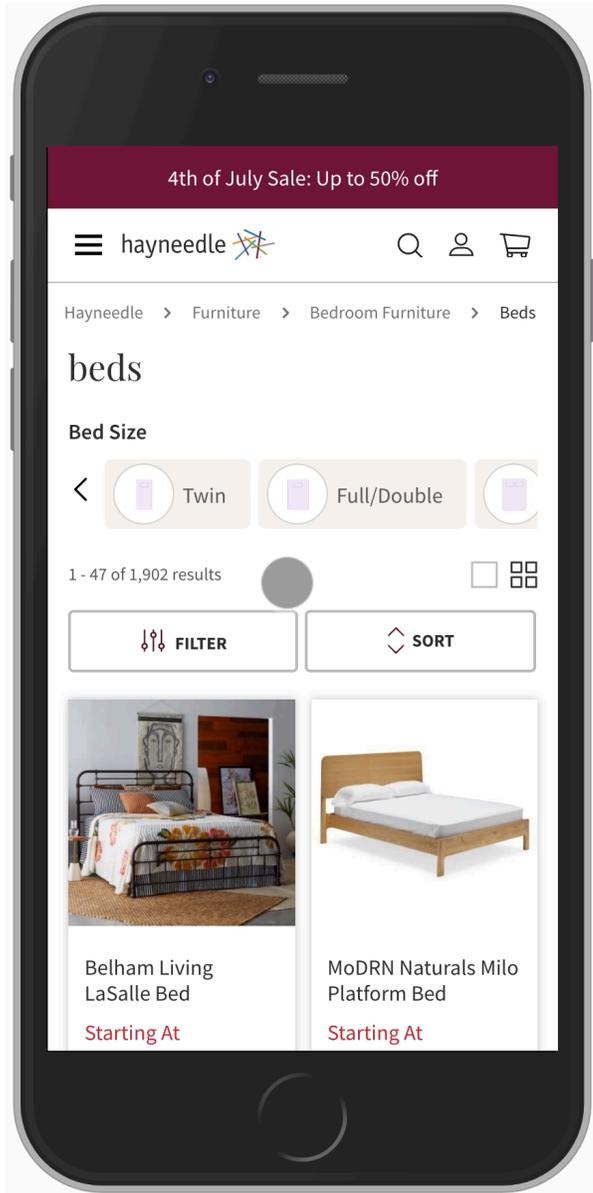
Source: [Smashing Magazine](#)

Design Pattern

A recurring, reusable solution that can be applied to solve a design problem.

Why Employ Design Patterns? *Familiarity.*

Familiar design helps supports the user by leveraging their prior experience with similar designs.



Learning Objective

Study the design of existing interactive web applications to identify common design patterns.

Why? Design trends change over time. What's popular today, may not be popular in a few years. Learning to identify design patterns will help you adapt to changing trends and design effective interactive web applications in the future.

Activity: Design Pattern Exploration

1. Working with your peers (2-4), study the design of the **main** portion of each of the provided example interactive web applications.
2. Identify common **design elements** and **design trends** among these web applications.
3. Quickly **sketch** a “summary” version of these common design elements and trends.

Activity: Design Pattern Summary Sketch

Working with your peers (2-4) at the **board**, **sketch** a “summary” version of the common design elements and trends you identified in the previous activity.

Label the design elements and trends you include in your sketch.

Rotate around the room (clockwise) to view the sketches created by other groups.

Discussion: Interactive Web Application Design Patterns

What are some of the common design patterns you observed across the “summary” sketches created by your peers?

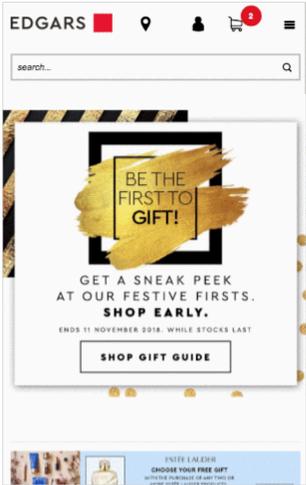
Let's document these...

Trending Interactive Web Application Design Patterns

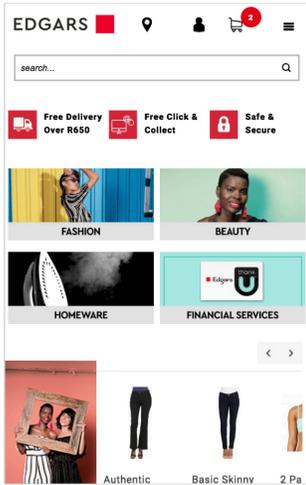
Source: [Smashing Magazine](#)

Content First

Prioritize the display of content



VS



+13%

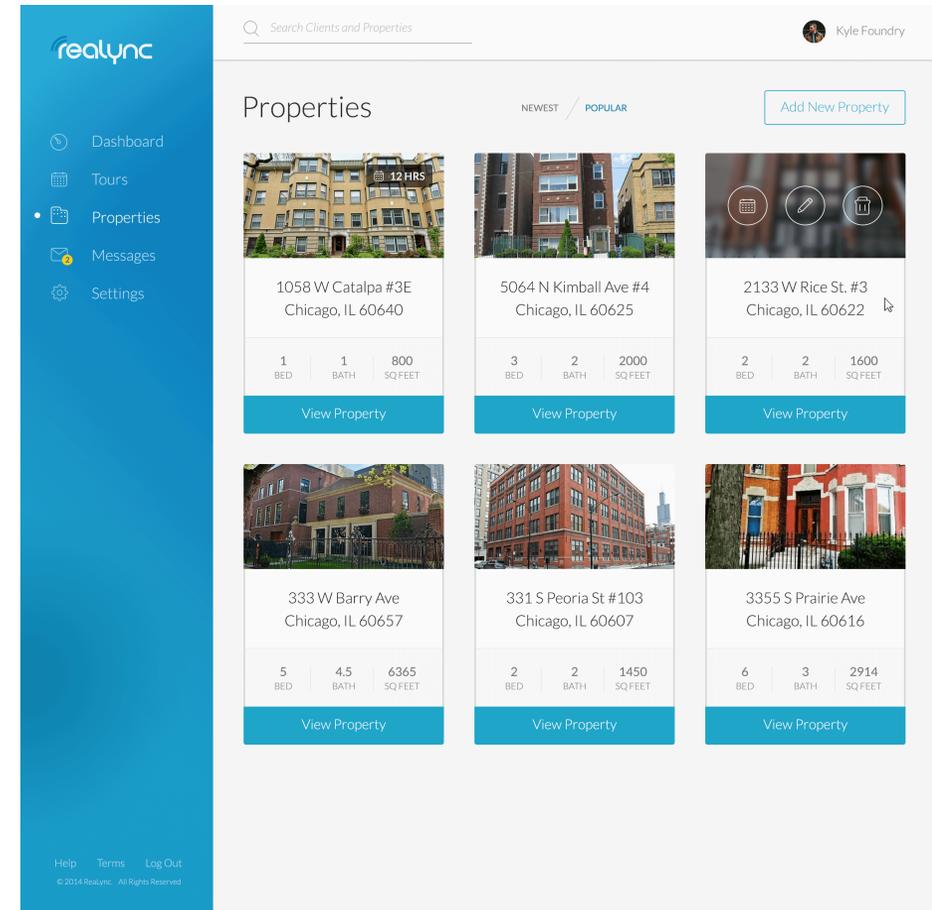
INCREASE IN REVENUE PER VISITOR
from a 11% increase in mobile conversion rate

Content Organized as Cards

A user interface design pattern of organizing content into visually distinct units.

Card: A visually distinct unit that groups related information and actions.

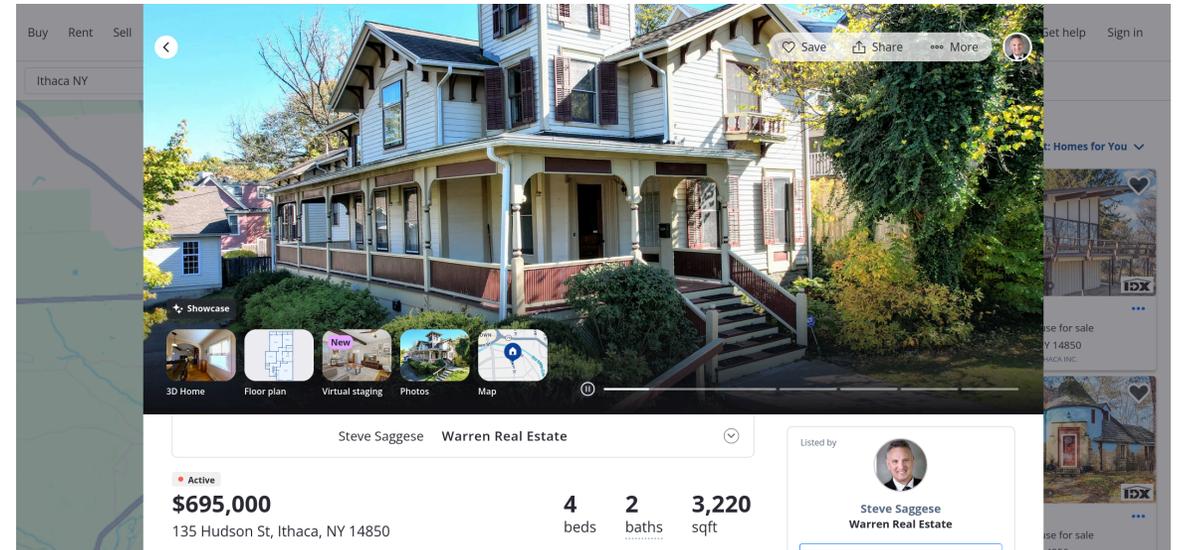
Each card serves as an entry point for further interaction or information.



Modal

Modal: A dialog box that appears on top of the main content, typically used to display additional information or prompt user actions without navigating away from the current page.

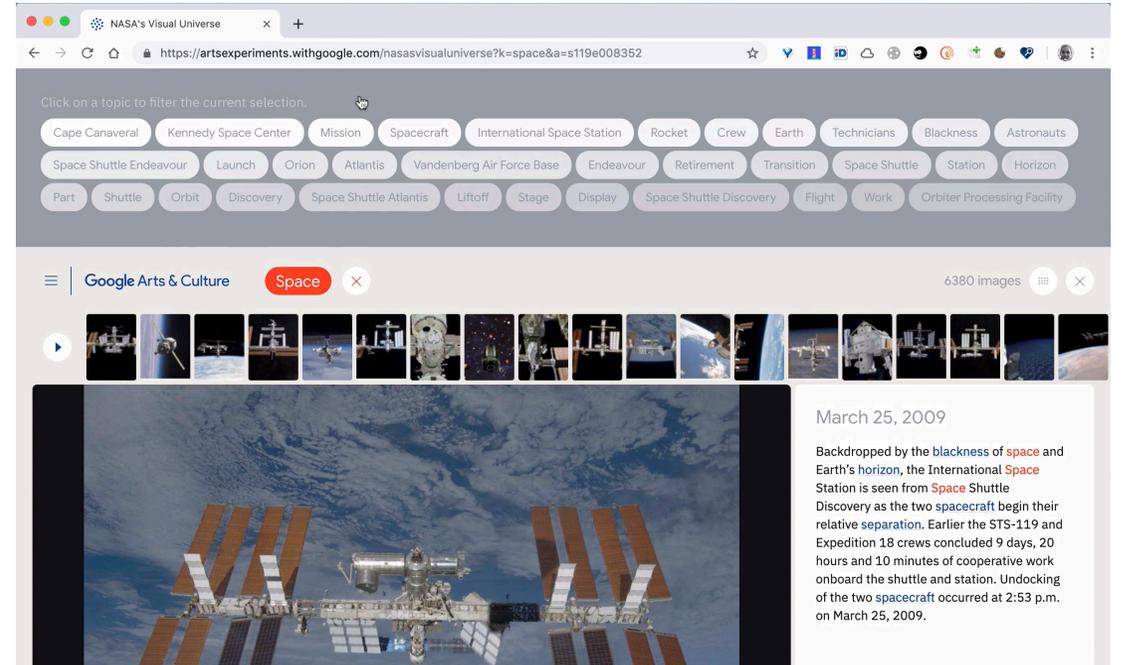
Support users in accessing additional information or performing actions without leaving the current page.



Filter Chips

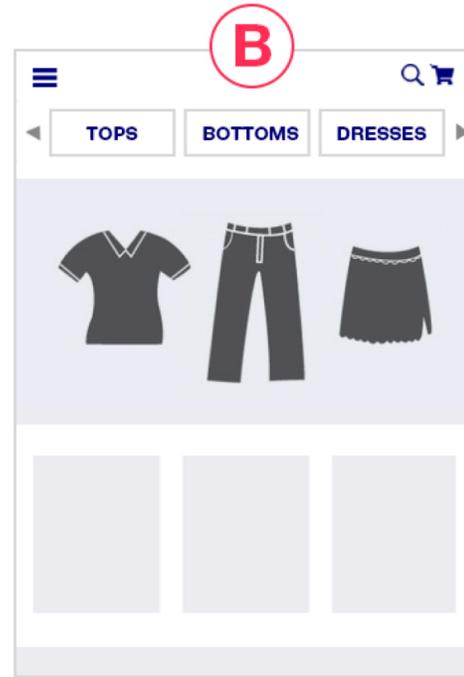
Chip: A small block of information that represents a filter, attribute, or action.

Support users in filtering or refining displayed content using small blocks of information.





VS



+5%

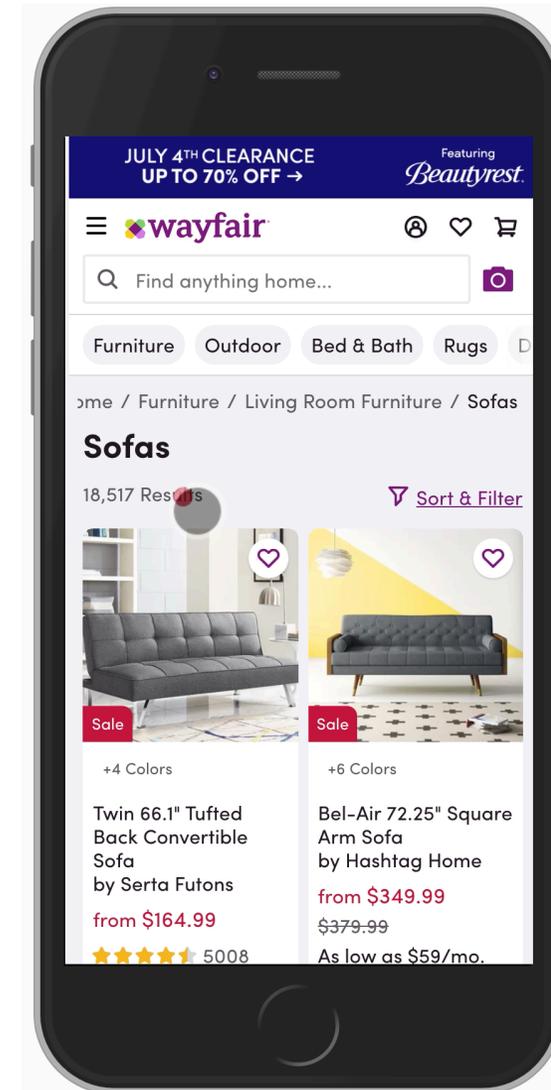
INCREASE IN
COMPLETED ORDERS

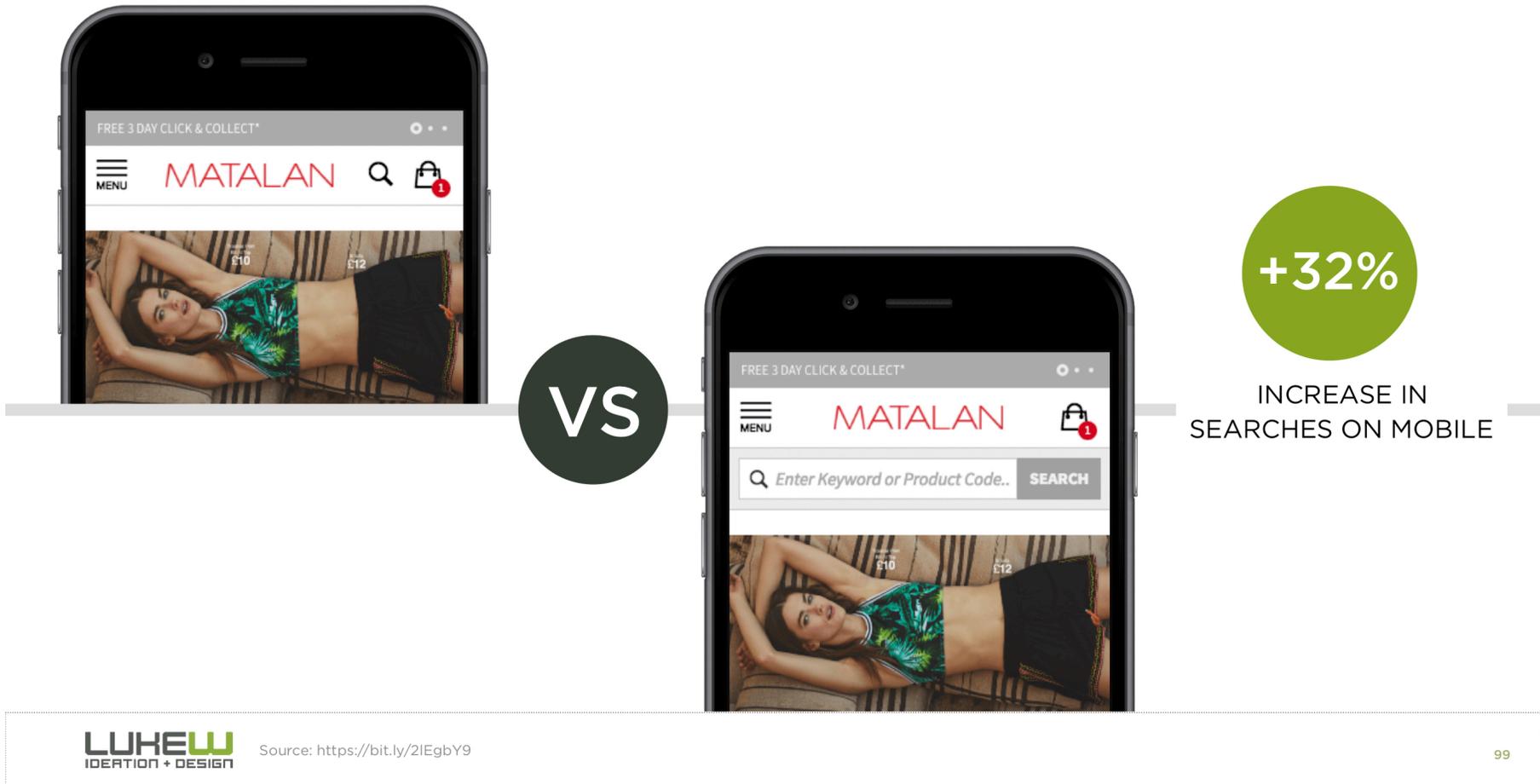
page views of the category
pages increased by 10% - 12%

Visible Search Bar

Search Bar: An input field that allows users to enter keywords or phrases to find specific content.

Support users in finding specific content by entering keywords or phrases.

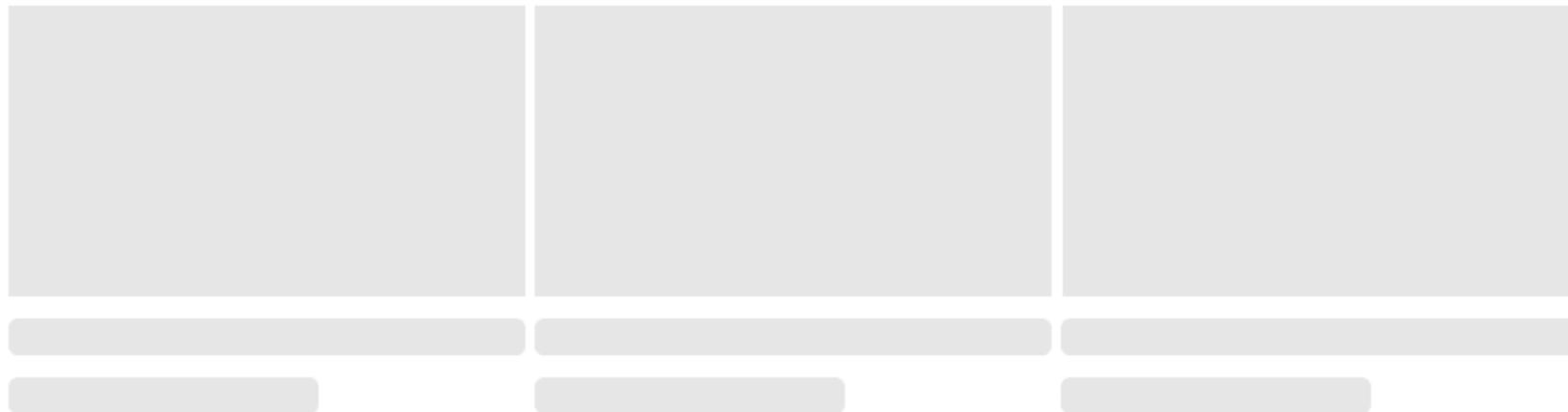




Skeleton

Skeleton: A placeholder element that mimics the layout of the actual content while it is loading. Frequently animated.

Support users in understanding the structure of the content and reduce perceived loading time.



Activity: Community Events Design

Working with your peers (2-4), sketch a design for the Project 2's community events **single-page application** that incorporates the design patterns we discussed today.

- Content first
- Content organized as cards
- Modal dialogs for additional information and actions
- Filter chips for filtering and refining displayed content
- Visible search bar for finding specific content
- Skeletons for loading content

Design Principles

Source: [Smashing Magazine](#)

Key Design Principles

Structure: Group related pieces of information

Spacing: Define clear relationships between pieces of information

Rhythm: Create a visual flow that guides the user through the content.

Contrast: Differences attract attention, create hierarchy, enhance readability, and evoke emotions.

Example: Structure

Product Thinking Bootcamp

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Alice Lidell, Host



Alice Lidell
Host

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Join me live!

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[Register Now](#)

 Free

 May 18, 2023

 10:00am — 12:00pm PST

Example: Spacing

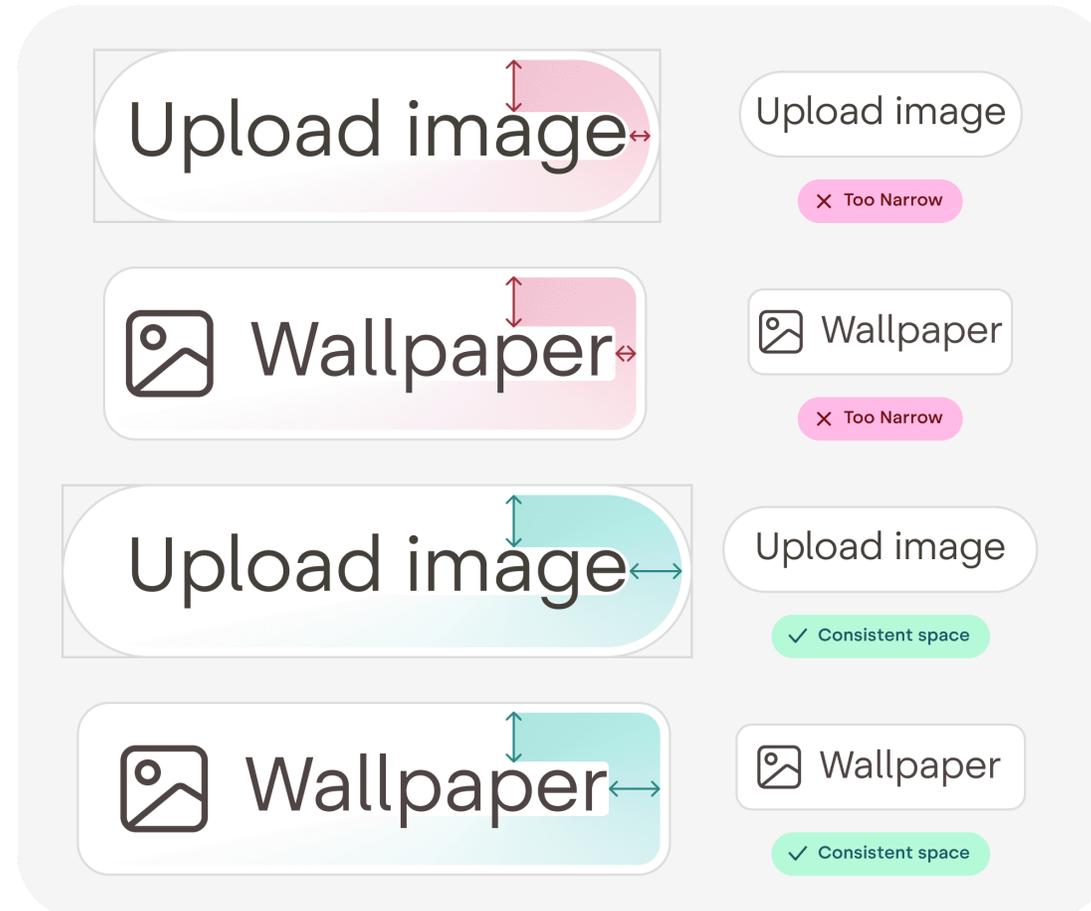
The image shows two registration forms side-by-side, illustrating the impact of spacing hierarchy. Both forms have a title 'Register now!', a subtext 'Register today and don't miss the opportunity to learn from the industry best!', and three input fields: 'Preferred name', 'Email address', and 'Phone number'. At the bottom of each form are 'Cancel' and 'Register' buttons.

Left Form (No spacing hierarchy): The form elements are packed closely together. The 'Preferred name' field is directly below the subtext, followed by 'Email address' and 'Phone number'. The 'Cancel' and 'Register' buttons are positioned below the 'Phone number' field with minimal spacing between them.

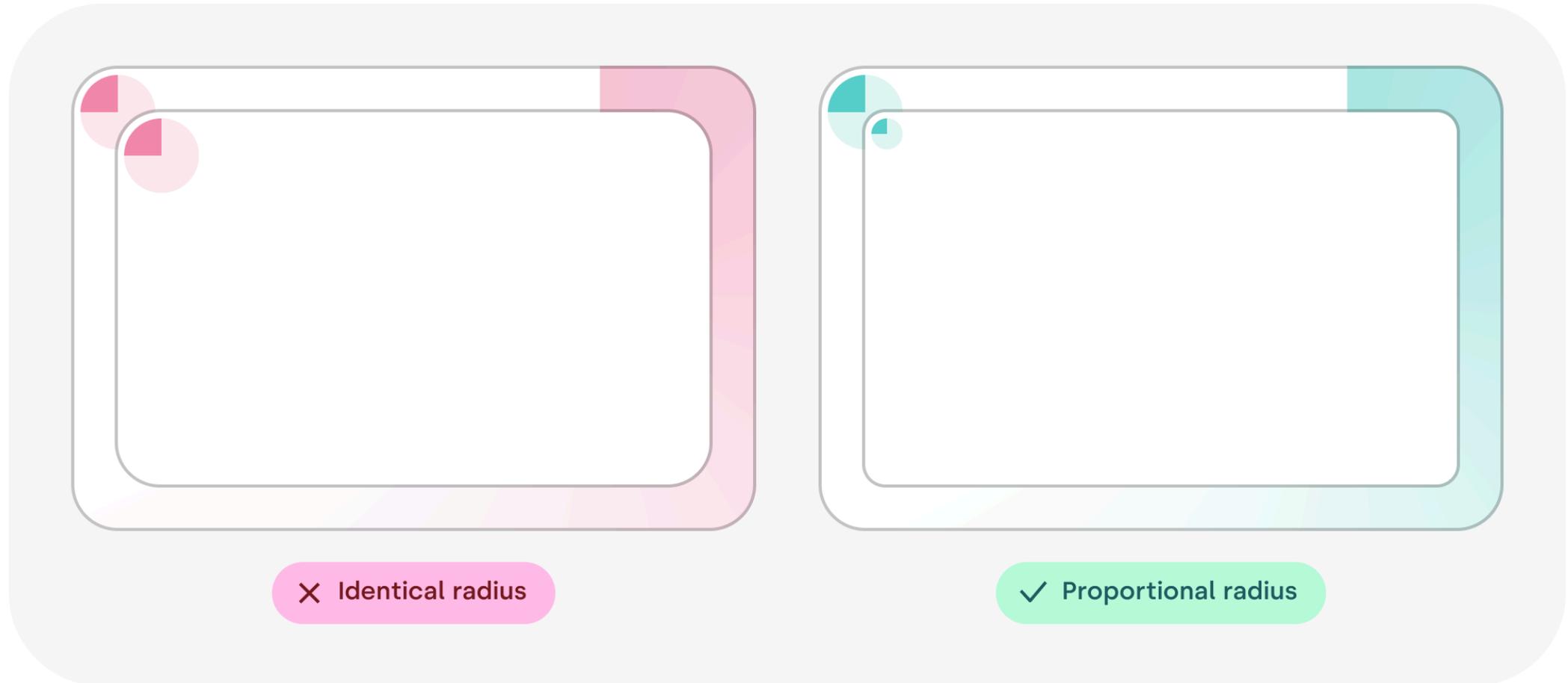
Right Form (Good spacing hierarchy): The form elements are clearly separated. There is significant vertical spacing between the subtext and the 'Preferred name' field, between the 'Preferred name' and 'Email address' fields, and between the 'Email address' and 'Phone number' fields. The 'Cancel' and 'Register' buttons are also well-spaced from each other and from the 'Phone number' field.

Annotations: Below each form is a colored callout box. The left one is pink and contains '✗ No spacing hierarchy'. The right one is green and contains '✓ Good spacing hierarchy'.

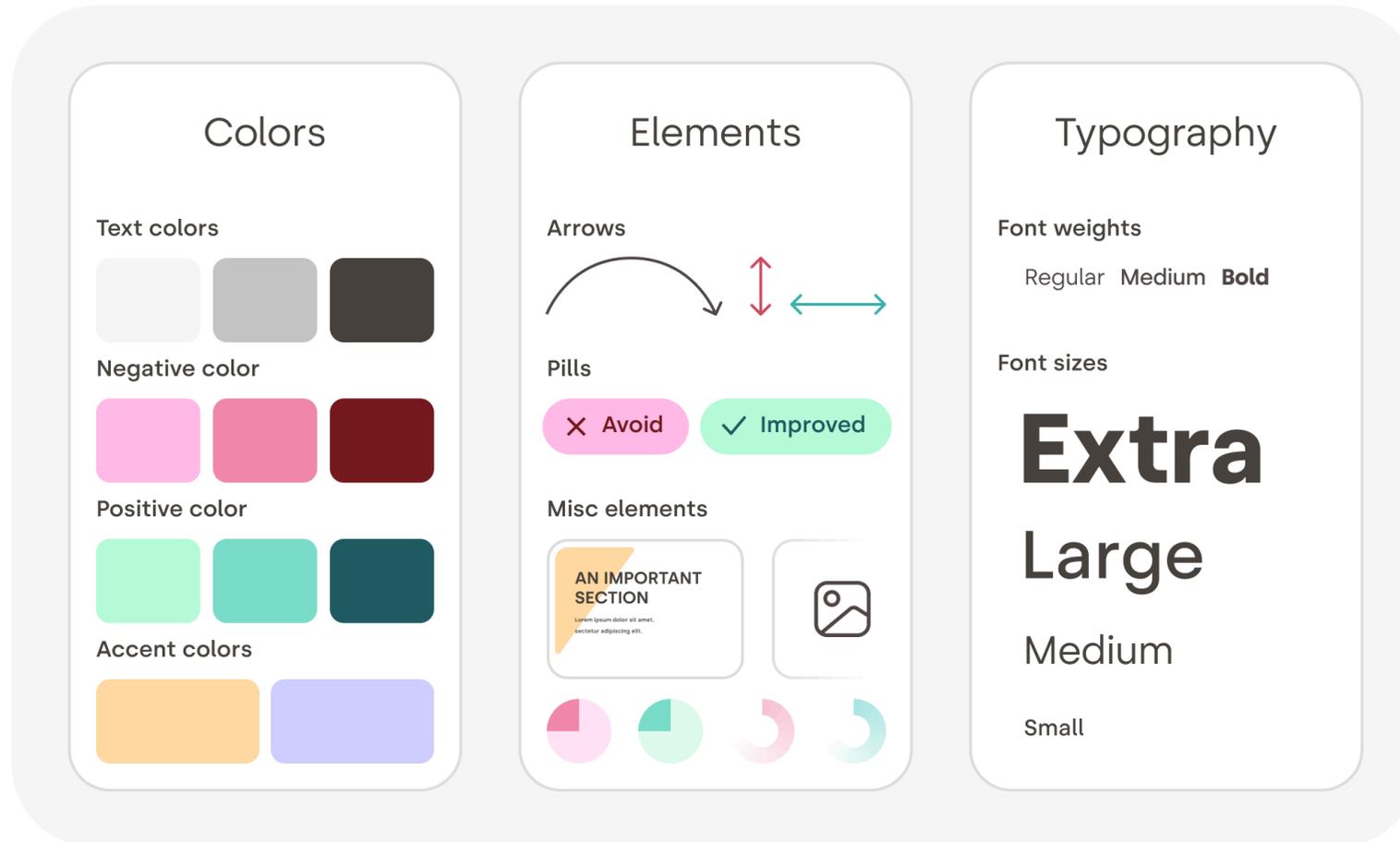
Example: Spacing - Text in a Box



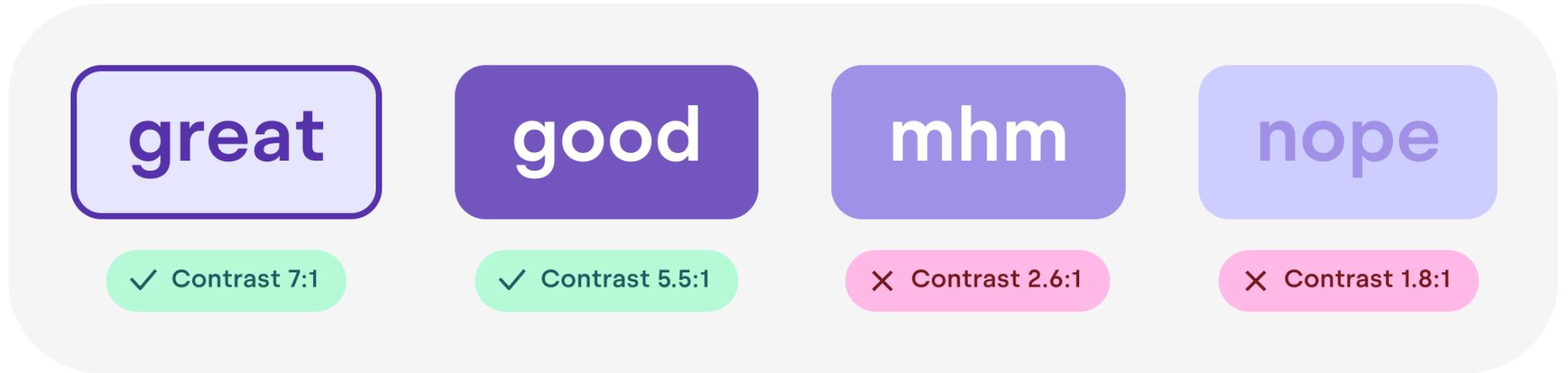
Example: Spacing - Nested Boxes



Example: Rhythm - Design System



Example: Contrast



Example: Contrast – Skip a Weight

Light Regular Medium Semi-Bold **Bold** **Black**

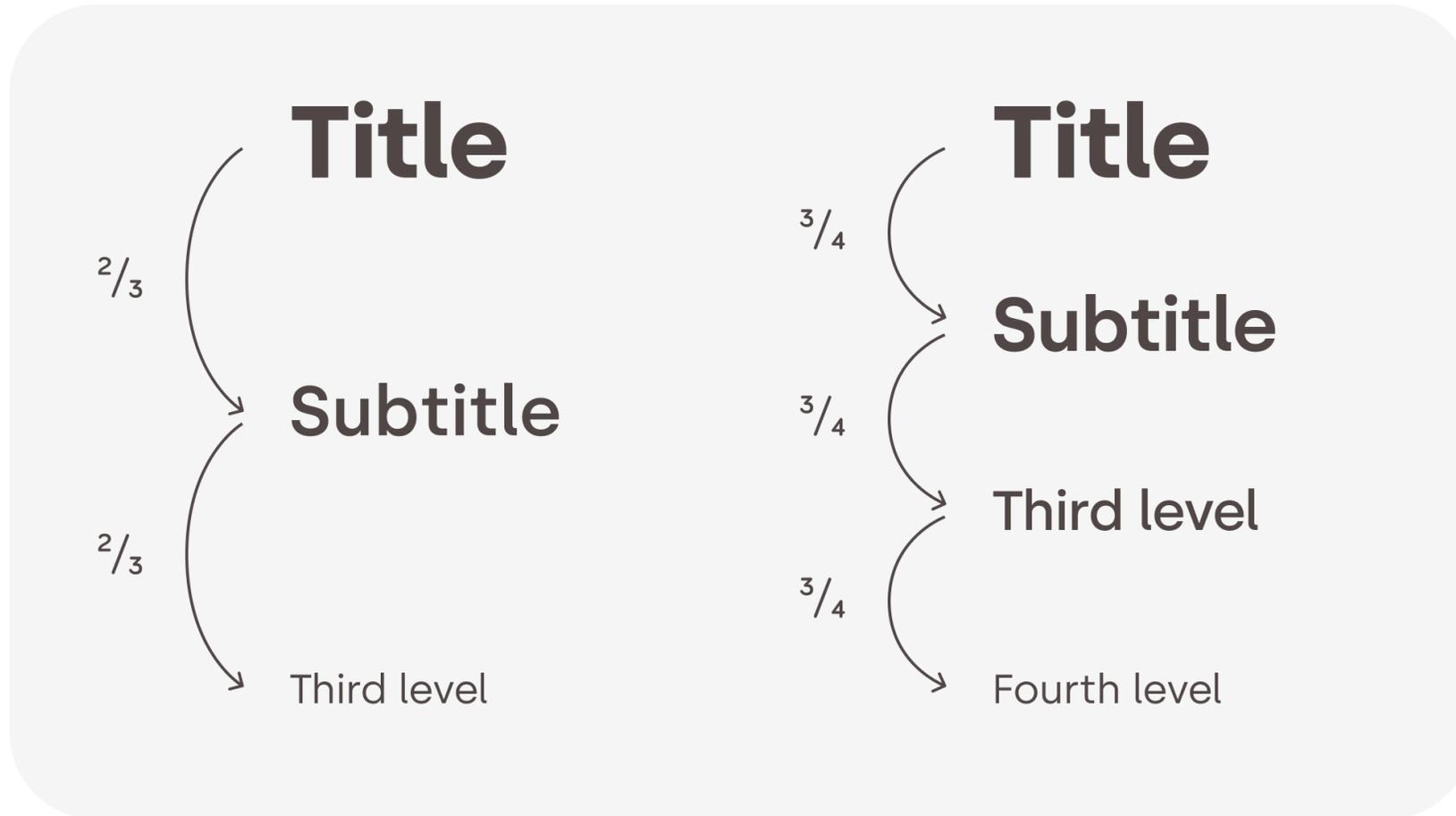
It's recommended to skip a weight.
Regular + Medium

✗ Contrast is too low

It's recommended to skip a weight.
Regular + Semi-Bold

✓ Contrast is sufficient

Example: Contrast + Hierarchy



Activity: Revise Events Design

Working with your peers (2-4), revise your design for the Project 2's community events single-page application to incorporate the design principles we just discussed.

- Structure
- Spacing
- Rhythm
- Contrast

Summary

Summary

- Design patterns are recurring, reusable solutions that can be applied to solve design problems.
- Design trends change over time. Learning to identify design patterns will help you adapt to changing trends.
- Today, interactive web applications frequently leverage cards, modals, filter chips, visible search bars, and skeletons.
- Key design principles include structure, spacing, rhythm, and contrast.

What's Next

Today: Project 2, Milestone 1 Due

Next Class: Utility First CSS Frameworks

Wednesday: Project 2, Milestone 2 Released

Friday: Practice Problem Workshop