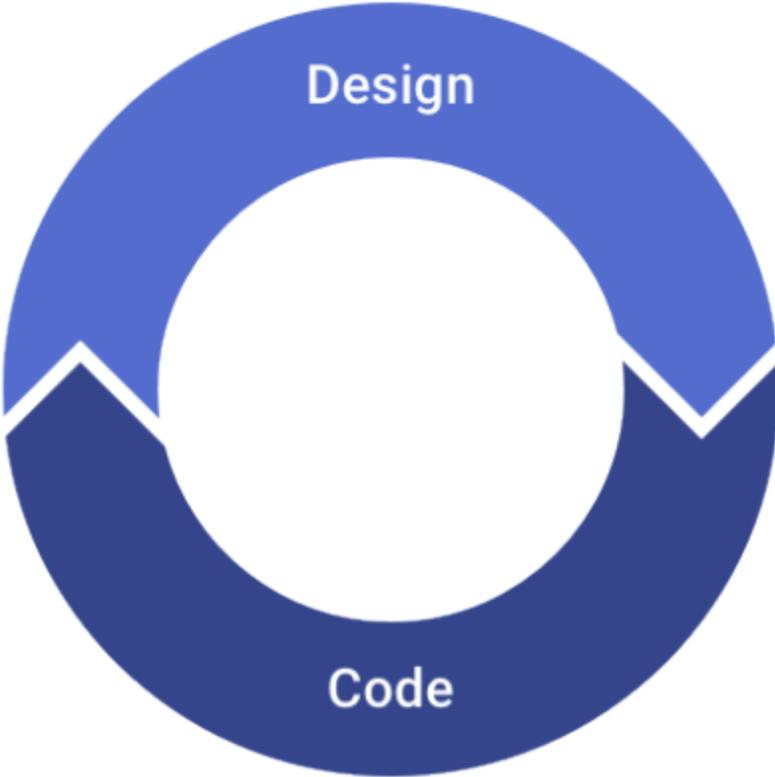**ITI0209: User Interfaces**

# 07. Design Systems

Martin Verrev

Spring 2023

**Design System** is the single source of truth which groups all the elements that will allow the teams to design, realize and develop a product.

# The Structure of a Design System

## Building Blocks

| Color Palettes | Typographic | Grid Definitions | Icons & |
|---|---|---|---|

## Pattern Library

| Templates | Modules | Components | Elements |
|---|---|---|---|

## Rules

| Design | Implementation Guidelines | Editorial Guidelines |
|---|---|---|

## Styleguide

# Definitions

**Design System** – A complete set of design standards, documentation, and principles along with the toolkit (UI patterns and code components) to achieve those standards.

**Pattern Library** – A subclass in the design system, this is the set of design patterns for use across a company.

**Style guide** – Another subclass in the design system, this static documentation describes the design system itself: how products should look and feel, use cases for UI patterns, correct typographic scales, etc.
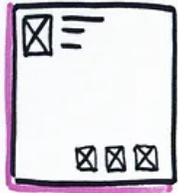
# Your Style Guide

You will want to describe for things like:

- Typography
- Colors
- Margins and paddings
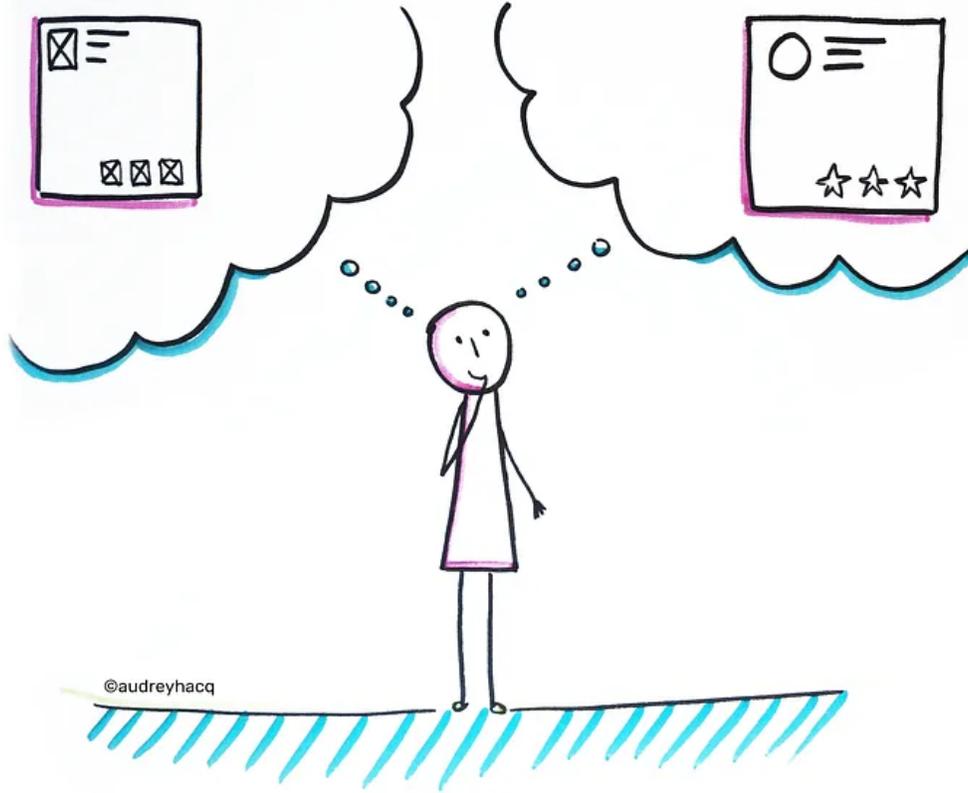- Box and image styles
- Borde styles
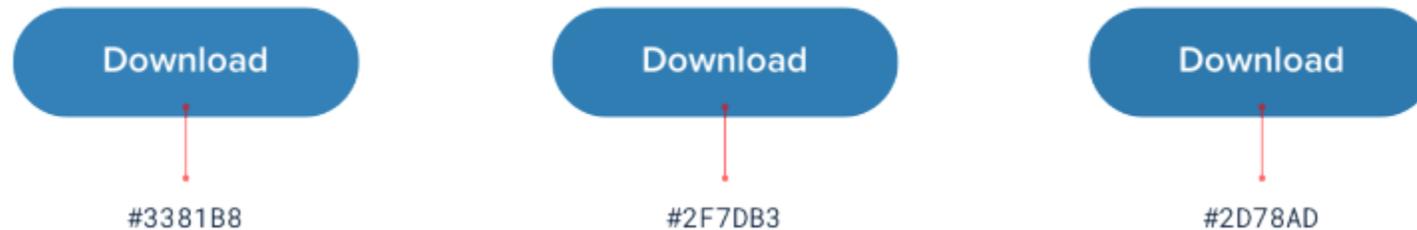- Opacity

# Define Choices in Advance

Instead of hand-picking values from a limitless pool any time you need to make a decision - start with a smaller set of options.

# Hierarchy Matters

**Visual hierarchy** refers to how important the elements in an interface appear in relation to one another - it is the most effective tool you have for making something feel *"designed"*.

**Separate visual hierarchy from document hierarchy**

Web browsers assign progressively smaller font sizes to heading elements, so an `h1` is large, and an `h6` small. It can encourage bad decisions in application UIs.

Don't let the element you're using influence how you style it — pick elements for semantic purposes and style them however you need for best visual hierarchy.

# Semantics is Secondary

When there are multiple actions a user can take on a page, it's easy to fall into the trap of designing those actions based purely on semantics.

- Primary actions should be obvious. Solid, high contrast background colors work great.
- Secondary actions should be clear but not prominent. Outline styles or lower contrast background colors are great options.
- Tertiary actions should be discoverable but unobtrusive. Styling these actions like links is usually the best approach.

| PRIMARY | SECONDARY | TERTIARY |
| --- | --- | --- |
| Save Draft | Save Draft | Save Draft |
| Sign up | Sign up | Sign up |
| Learn More | Learn More | Learn More |

| PRIMARY | SECONDARY | TERTIARY |
| --- | --- | --- |
| Unpublish | Unpublish | Unpublish |

# Typography

- If you want an elegant or classic look, you might want to incorporate a serif typeface in your design

- For a playful look, you could use a rounded sans serif:

- If you're going for a plainer look, or want to rely on other elements to provide the personality, your safest bet is a fairly neutral sans-serif — think something like Helvetica.

- If you really don't trust your own taste, one great option is to rely on the system font stack: `-apple-system, Segoe UI, Roboto, Noto Sans, Ubuntu, Cantarell, Helvetica Neue;`

Sans Serif

Aa

Montserrat

Serif

Aa

Playfair Display

# Text Scales

Choosing font sizes without a system is a bad idea for two reasons:

1. It leads to annoying inconsistencies in your designs.
2. It slows down your workflow.

## Hand-crafted scales

For interface design, a good approach is to simply pick values by hand. You don't have to worry about subpixel rounding errors this way, and you have total control over which sizes exist instead of outsourcing that job to some mathematical formula.

# Choosing a Font

- **Ignore typefaces with less than five weights.** While not always true, typefaces that come in a lot of different weights tend to be crafted with more care and attention to detail than typefaces with fewer weights.

- **Optimize for legibility.** When someone designs a font family, they are usually designing it for a specific purpose. Fonts meant for headlines usually have tighter letter-spacing and shorter lowercase letters, while fonts meant for smaller sizes have wider letter-spacing and taller lowercase letters.

- **Choose Popular fonts.** If a font is popular, it's probably a good font. Most font directories will let you sort by popularity, so this can be a great way to limit your choices. Inspect some of your favorite sites and see what typefaces they are using.

# Examples of Design Systems

- Google Material Design System. https://material.io/

- Apple Human Interface Guidelines. https://developer.apple.com/design/

- Shopify Polaris. https://polaris.shopify.com/

- Uber Base Web. https://baseweb.design/

- Taltech. https://haldus.taltech.ee/sites/default/files/2022-02/TalTech_CVI_2022.pdf

- Tartu Ülikool. https://ut-stiiliraamat.voog.com/

- UK Government Design System. https://design-system.service.gov.uk/

See also: Design Systems in Finland. https://github.com/viljamis/design-systems-in-finland

# Refactoring UI

*Adam Wathan, Steve Schoger*

2018

https://www.refactoringui.com/

# Design Systems. A practical guide to creating design languages for digital products.

*Alla Kholmatova*

2017

https://www.smashingmagazine.com/provide/eBooks/design-systems.pdf

# Links

Everything you need to know about Design Systems.
https://uxdesign.cc/everything-you-need-to-know-about-design-systems-54b109851969#

A Brief Guide to Creating a UI Style Guide. https://xd.adobe.com/ideas/process/ui-design/ui-style-guide-template/

10 great design systems and how to learn (and steal) from them
. https://uxdesign.cc/10-great-design-systems-and-how-to-learn-and-steal-from-them-4b9c6f168fa6

Fonts In Use. https://fontsinuse.com/

# Thank you!