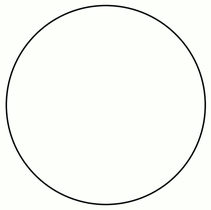
Design Systems

A design systems is a comprehensive set of guidelines, compositional elements, and resources that are systematically organized and documented to ensure consistency and efficiency in the design and development of digital products or services. It serves as a centralized reference point for designers, developers, and other stakeholders involved in the creation of user interfaces and experiences. Within a design system, there are the tangible elements: a style guide, a component library and a pattern library; and intangible elements: design purpose, principles and the necessary documentation to define the interaction concepts.



Atoms

Style Guide / Elements Library

Feature collections of UI-element groupings or layouts.

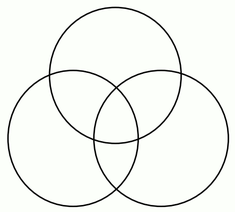
↳ Includes: colors*, fonts, spacing, shapes, icons, illustrations/images, sounds, voice & tone.

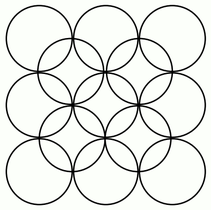
Molecules

Component Library

Specify individual UI elements.

↳ Includes: buttons, fields, sliders, toggles, frames, etc.





Organisms

Pattern Library

Feature collections of UI-element groupings or layouts.

↳ Includes: cards, navigation bars, logos, search fields, etc.

Documentation

Design systems include functional and technical documentation that allows a multifaceted team to develop in conjunction the desired product.

The Spectrum of Design Systems

There are multiple types of design systems adapted to the product's scope, the UX Collective defines the following criteria for understanding and designing systems:

Strict — **Loose**

Broad and comprehensive, covering all use-cases with complex documentation.

Basic framework allowing for experimentation and creativity.

Modular — **Integrated**

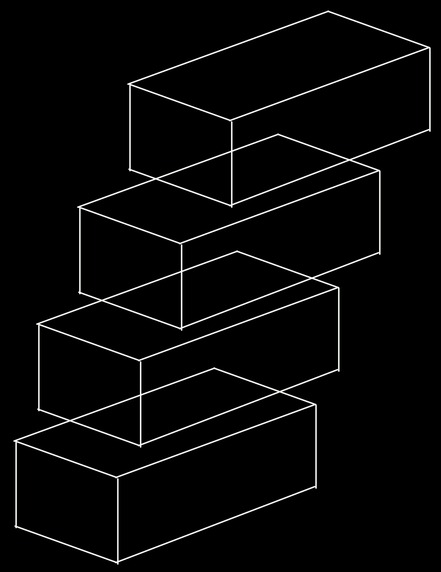
Made of interchangeable and reusable parts. This is great for scaling and system adaptability.

Focus on one unique context with few repeating parts, used to simplify creative designs.

Centralized — **Distributed**

One team is in charge of the system, responsible for the upkeep and evolvement.

Several people from different teams manage and adapt the system.

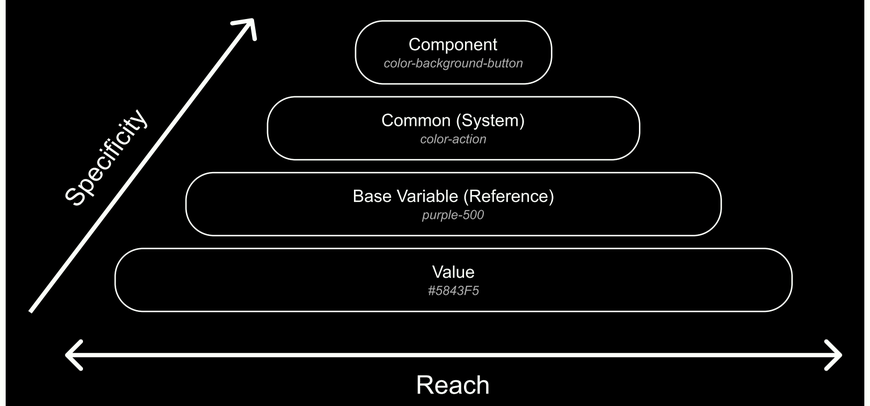


Abstraction

Abstraction is the process of capturing the essential characteristics of a system, object, or concept while omitting irrelevant or non-essential details. It allows developers to view complex systems through a simplified lens, facilitating comprehension, modularity, and efficiency. By abstracting away the complexities, designers can create scalable and maintainable systems that are easier to reason about and extend. (GeeksforGeeks)

Design Tokens

Design tokens are system names and pairings that represent design decisions in a system's visual style. Tokens replace static values, such as hex codes for color, with explanatory names that are purpose driven. Design tokens vary in level of abstraction within the system. For example, a base variable token acts as the primitive values; A common token is generally used with a single action across multiple situations; A component token is used for a specific component case.



Bellow is the name skeleton for a design token, each attribute reads from left to right with specificity.

color	background	container	primary	hover
category	property	surface	variant	state

Design tokens can point to different themes depending on the set of conditions (contexts). For example, light and dark modes. When the dark mode is enabled, the context overrides the default values of the system to the second theme.

Colors

Take, for example: Color. In a design system, there is a color palette that includes all the colors that can be used in a page. These colors will be used in accordance to certain color roles, with each having a design token whose value can change without adapting their code name. Given the context, a new theme can be defined and new values from the color palettes wil be called for the color roles--with the exception of static colors that will have a consistent value across themes.

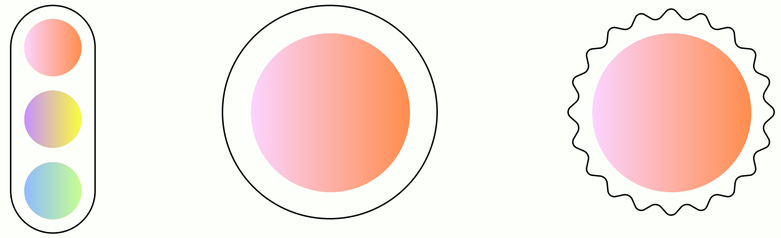
↳ Color Palettes

An overview with names and codes for all of the colors that will be used.

↳ Color Roles

The specific usage for the colors that will bew used throughout the site. This is a systematic way of categorizing the color palette which can then be switched with different themes.

- ↳ Primary Brand
- ↳ Secondary Brand
- ↳ Tertiary Brand
- ↳ Content
  - ↳ Text
  - ↳ Icons
  - ↳ Borders
- ↳ Background
- ↳ Accent
- ↳ Inverse
- ↳ Semantic Colors
  - ↳ Success
  - ↳ Error
  - ↳ Notice
  - ↳ Informative



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Atomic Design by Brad Frost

Everything you need to know about Design Systems by Audrey Hacq in UX Collective

Material Design on design tokens

Why are Abstractions Important in System Design? by GeeksforGeeks

Customization vs. Configuration in Evolving Design Systems by Charlie Backus in Spotify R&D

Schema (Figma's design systems conference) New York 2022

Sparkbox's Design Systems Survey

Created by Magdalena Fraga Lauhirat @ 2024