Information Architecture and Web Usability

Web Design System Tools

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Terminology of Design Systems

- *Design token:* a container of code that describes a design element.

According to Nielsen (other people diverge) [1]:

- *Style guide:* specific elements or methods. Most common example are colors, typography, trademarks, logos, and print media.
- *Component library:* contain predetermined reusable UI elements. Primarily visuals and code.
- *Pattern library:* feature collections of UI-element groupings or layouts.
- *Design systems:* a set of standards to manage design at scale.

[1] https://www.nngroup.com/articles/https://www.nngroup.com/articles/design-systems-101/

Basic Structure of a Design System

- A style guide + component library + governance rules.
- Governance rules include access rights or version control.

Basic Structure of a Design System

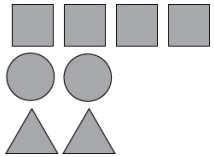
According to Nielsen (other people diverge) [1].

Style guide(s)

Fonts,

Colors,

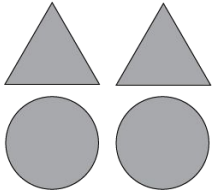
Trademarks …



Component Library

Buttons,

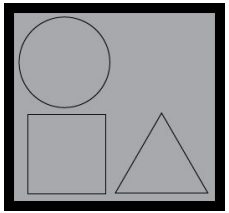
Inputs …



Pattern Library

Layouts,

Templates …



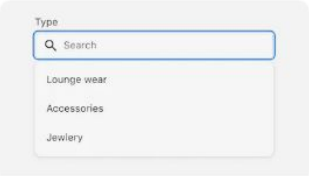
[1] https://www.nngroup.com/articles/https://www.nngroup.com/articles/design-systems-101/

Real World Design Systems

- Shopify’s Polaris
  https://polaris.shopify.com/
- IBM’s Carbon
  https://carbondesignsystem.com/
- GitHub’s Primer
  https://primer.style/
- Atlassian’s Design System
  https://atlassian.design/

Real World Design System Polaris

Forms



Autocomplete

The autocomplete component is an input field that provides selectable suggestions as a merchant types into it. It allows merchants to quickly search through and select from large collections of options. It's a...

Checkbox

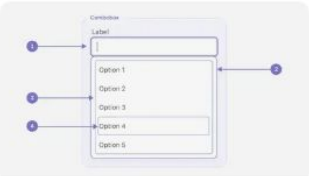
Checkboxes are most commonly used to give merchants a way to make a range of selections (zero, one, or multiple). They may also be used as a way to have merchants indicate they agree to specific terms and services.

Choice list

A choice list lets you create a list of grouped radio buttons or checkboxes. Use this component if you need to group together a related list of interactive choices.

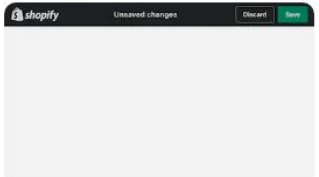
Color picker

The color picker is used to let merchants select a color visually. For example, merchants use the color picker to customize the accent color of the email templates for their shop.



Combobox

Combobox is an accessible autocomplete input that enables merchants to filter a list of options and select one or more values.



Contextual save bar

The contextual save bar tells merchants their options once they have made changes to a form on the page. This component is also shown while creating a new object like a product or customer. Merchants can...

Date picker

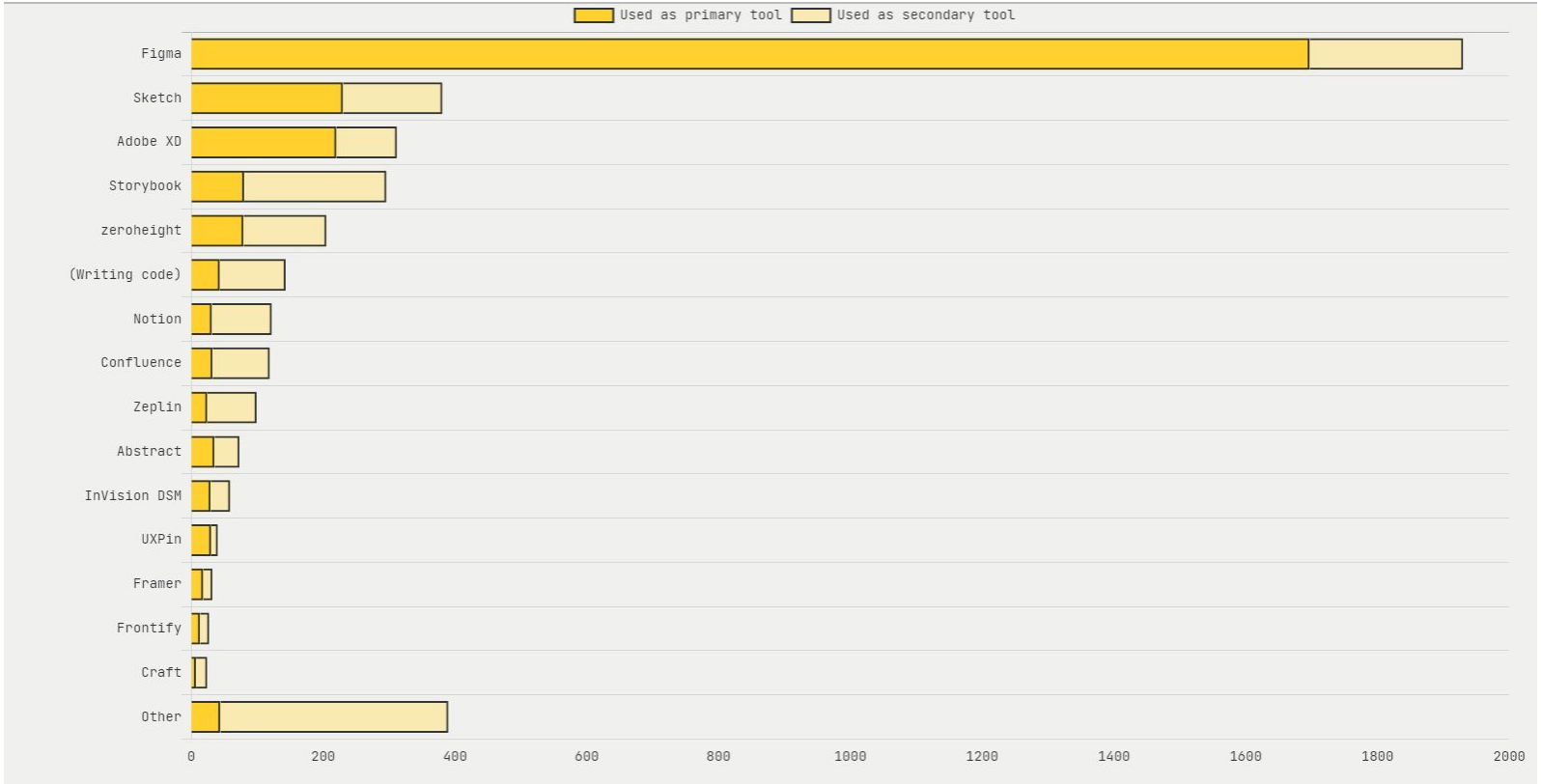
Date pickers let merchants choose dates from a visual calendar that's consistently applied wherever dates need to be selected across Shopify.

Form

A wrapper component that handles the submission of forms.

https://polaris.shopify.com/

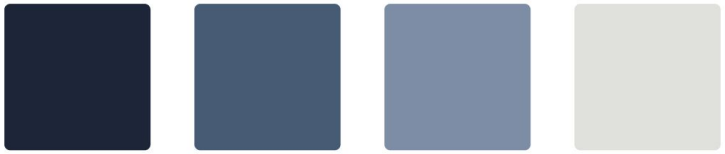
2021 Survey Software for Managing Design Systems



[6] https://uxtools.co/survey/2021#design-systems

Reference Style Guide

Colors



Brand	Brand Light 1	Brand Light 2	Brand Light 3
rgba(29,37,56,1)	rgba(71,91,116,1)	rgba(124,141,165,1)	rgba(224,225,220,1)
hsla(222,32,17,1)	hsla(213,24,37,1)	hsla(215,19,57,1)	hsla(72,8,87,1)
#1D2538	#475B74	#7C8DA5	#E0E1DC

[5]

```
/* typography*/
--font-family1: Garamond, serif;
--font-size1: 2rem;
--font-weight1: bold;
--font1: var(--font-weight1) var(--font-size1) var(--font-family1);

--font-family2: "Courier New", monospace;
--font-size2: 1.5rem;
--font-weight2: normal;
--font2: var(--font-weight2) var(--font-size2) var(--font-family2);

--font-family3: "Times New Roman", serif;
--font-size3: 1rem;
--font-weight3: normal;
--font3: var(--font-weight3) var(--font-size3) var(--font-family3);

--font-family4: Arial, sans-serif;
--font-size4: 0.75rem;
--font-weight4: normal;
--font4: var(--font-weight4) var(--font-size4) var(--font-family4);
/*--*/
```

[5] https://www.figma.com/file/tf71M8MUWYlPEqzMkIuzMx/50-Colour-Palettes-(Community)?node-id=4%3A3750

Reference Components

- Alert
- Button
- Heading

Reference Guidelines

- Styles
- Components
- Governance rules

Style Guide Only Tools

Invision DSM, Supernova, Zeplin, Zeroheight:

- Tools used for style guide generation.
- System of creating tokens for documentation.
- Mostly dependent on importing styles/components from external tools like Figma, Storybook, Sketch etc….

Styles

- Created by using tokens.
- Styles get different values either directly or imported.

Components

- Imported through external tools.
- Components represent connected parts or provide direct code samples.
- Different types of exporters

Governance

- Different roles and permissions
- Jira support

Reviewed Design System Tools

1. Storybook
2. UXPin
3. Figma
4. Sketch
5. Adobe XD

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Storybook - Key Features

- Tool for creating a collaborative component library.
- Free and open source.
- Is installed in project nearby code. Components are rendered inside browser.
- Easy to use in development environment.
- Enables fast and smooth development of components in isolation.
- Different use cases of components are documented as “stories”. A story renders a component with specified arguments in a specified environment.

Styles

- Style guide can be imported via add-ons from Zeroheight or Zeplin.
- When prototyping via code the better approach is probably to also write the style guide via code.

Components

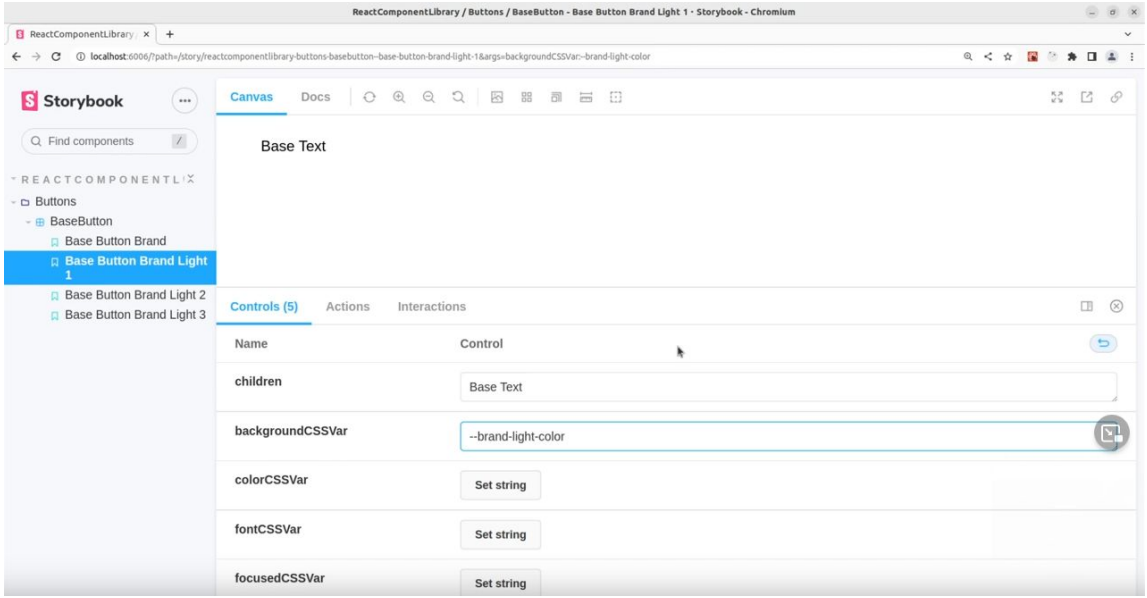
- Components can be developed in isolation by the help of storybook.
- Different Stories describe different use cases of the components and act also as documentation.
- Documentation in code is automatically displayed also in Storybook documentation tab.
- Various add-ons ease testing of component (functionality, accessibility, appearance)

Governance

- There is an own tool for publishing storybook to protected workspaces called Chromatic.
- Chromatic contains various governance features:
    - Role allocation
    - Automatic detection of visual changes
    - Managing pull requests easily
    - Combining CI with Storybook
    - Browsing of component library online for all branches and builds

Storybook - Demo

- Shows reference components created with Storybook.
- Shows documentation features live.
- Shows some of most popular add-ons.



https://youtu.be/CDx9Tcw4aEc?t=426

Storybook - Conclusion

- Compatible with most major frameworks (React, Vue, Angular, Svelte, Ember, …).
- Used by well-known companies (Microsoft, Github, Gitlab, AirBnB, Adobe, …).
- Component Design Process can be done smoothly and without distraction.
- Easy setup and lots of examples online.
- Open Source and free. Chromatic is limited for free use.
- Lots of add-ons are available (Automated Testing, Automated Documentation, Accessibility Check, etc.).
- Component Driven Workflow can be implemented naturally.

Reviewed Design System Tools

1. Storybook
2. UXPin
3. Figma
4. Sketch
5. Adobe XD

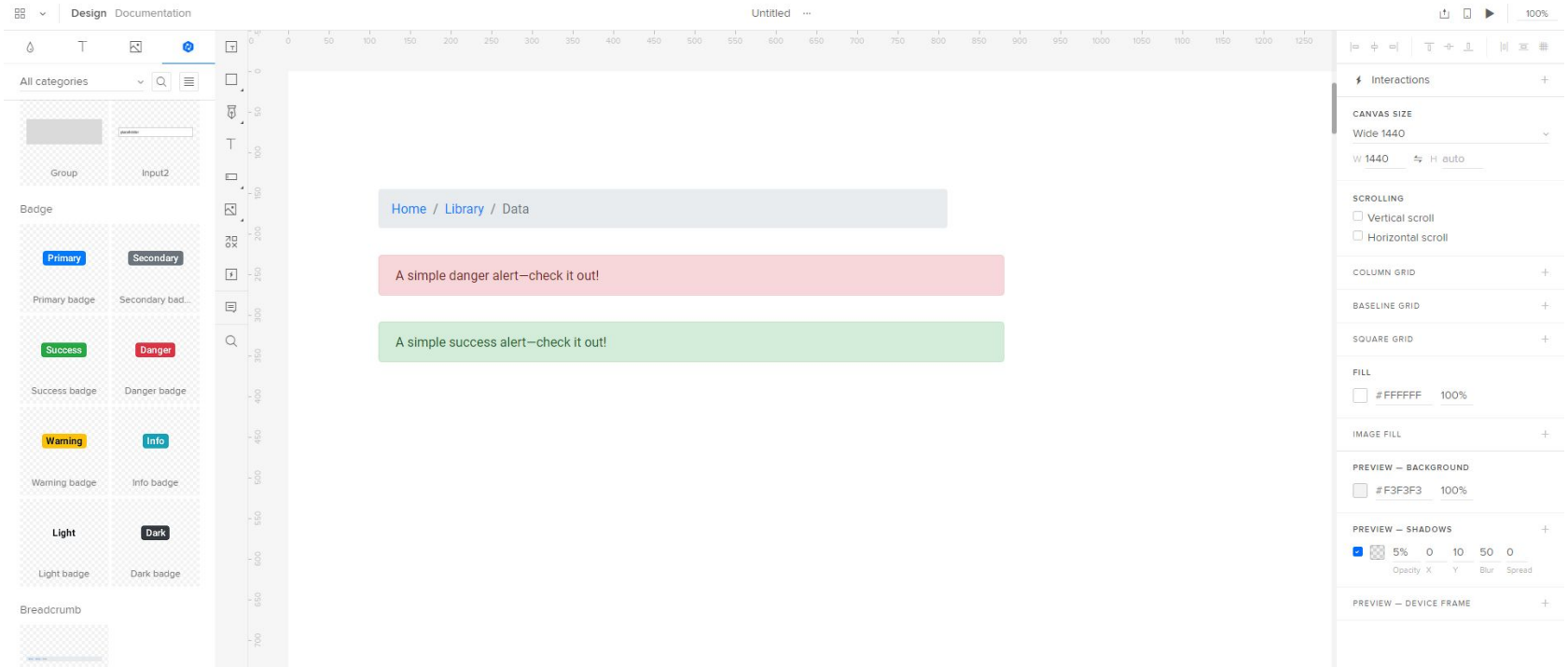
UXPin - Key Design System Features

- Manage access rights to design systems.
- Synchronize design systems.
- Merge design systems.
- Create hierarchical structures.
- Export design systems as JSON or CSS tokens.

UXPin - Design System Collaboration

- Invite users to work on the project.
- Project activity history similar to Git blame.

UXPin – Showcase



https://www.youtube.com/watch?v=uYj0DsReVks&ab_channel=dimension11000

UXPin - Design System Conclusion

- Supports many design systems and libraries out of the box.
- Manage multiple design system libraries, set permissions, synchronize them.
- Used by prominent companies like Amazon or PayPal.

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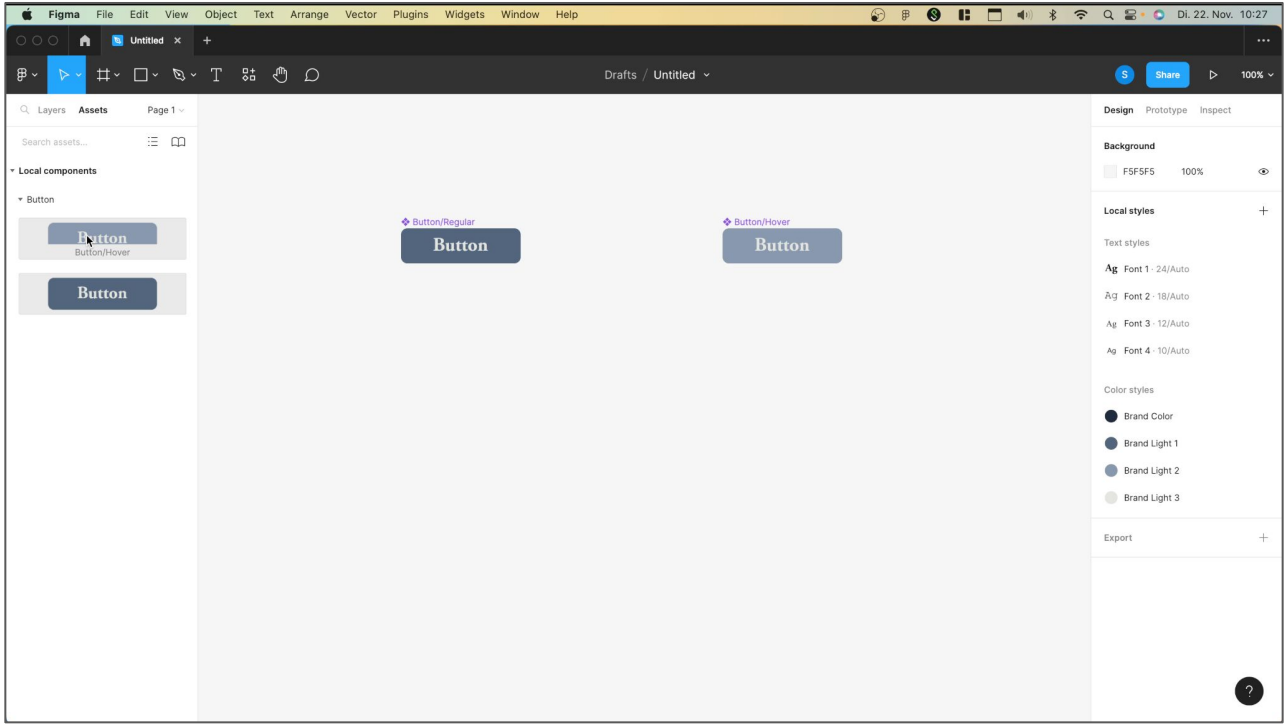
Figma

- Design tool to mock and prototype user interfaces
- Well suitable to create a design system
- Allows creation of:
  - Styles
    - ➢ Fonts
    - ➢ Colors
    - ➢ Layers
  - Components
- Governance rules through sharing permissions
- Developer Handoff

Figma – Showcase



https://youtu.be/I2v4JRdGh9w

Reviewed Design System Tools

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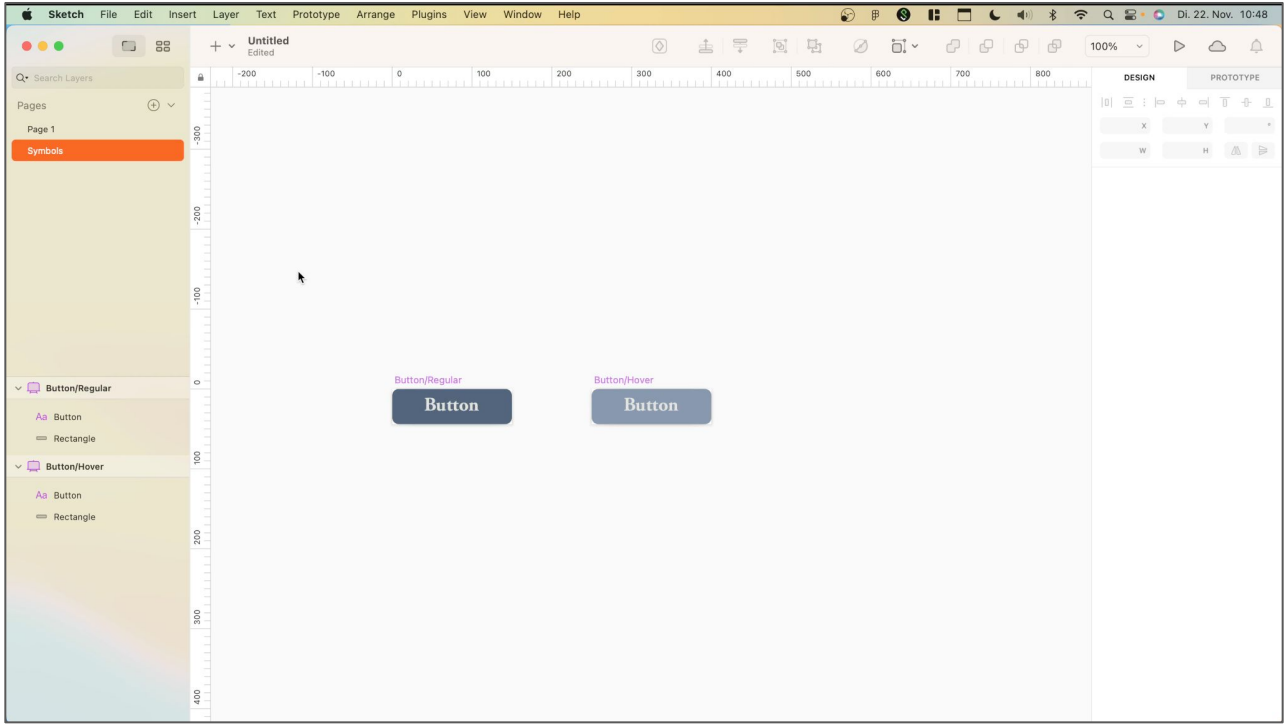
Sketch

- Native macOS design tool to mock and prototype user interfaces.
- Building design systems:
  - Color Variables
  - Text Styles
  - Layer Styles
  - Symbols
- Can be shared across documents with libraries.
- Library changes can be pushed to remain in sync.

Sketch – Showcase



https://youtu.be/KMeZd6DjC1s

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Adobe XD - Key Features

- Tool for creating and sharing different styles and components.
- Features a prototype window with live demo and different flows.
- Easy to understand with simple component generation.
- Variety of customization for components.
- Easy sharing of components as well as code for developers.

Styles

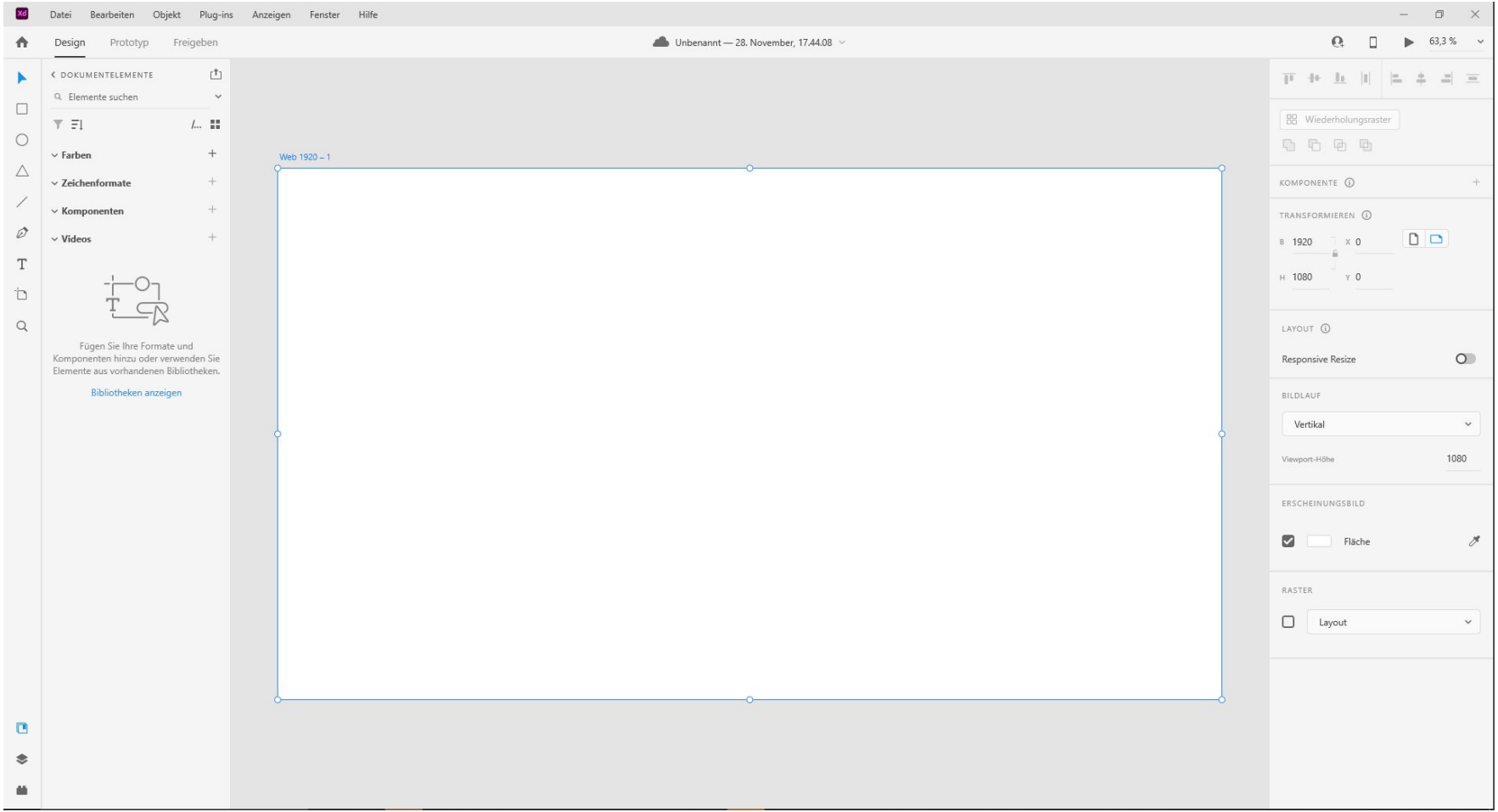
- Styles are created in the Adobe XD built in design tool.
- Styles can be saved as colors, drawing formats, components or videos.

Components

- Components can be developed in isolation in Adobe XDs own design tool.
- Components can be grouped to form a hierarchy of components.
- Component testing with prototype tool.
- Component sharing with own sharing tool.
- When sharing components, different options on how to share can be chosen from.

Governance

- Governance is enforced by controlling the privacy of the link to share components/designs.3 versions to choose form:
  - Everybody
  - Only invited people
  - Secured by password



https://youtu.be/W7teOpAEXV0

Adobe XD - Conclusion

- Easy to get started with good online documentation.
- Provides a lot of plug-ins and ready to go templates.
- Easy code deployment for production (including Web, IOS, Android).
- Works very well in combination with Adobe Creative Cloud.

Recommendation For Web Design System Tools

- For designing and style generation:
  - 1. Place: Figma
  - 2. Place: Adobe XD
  - 3. Place: UXPin
- For implementing designs:
  - 1. Place: Storybook

Design System Tools Overview

	Storybook	UXPin	Figma	Sketch	Adobe XD
Style Guide	~	✓	✓	✓	✓
Component Library	✓	✓	✓	✓	✓
Governance	✓	✓			~
Free to use	✓	~	~		
Collaborative Working	✓	✓	✓	✓	✓
Compatibility	✓	✓	✓	✓	✓
Documentation	✓	~	~	~	✓

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References

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[2] https://npmtrends.com/fractal-vs-fractalis-vs-storybook

[3] https://storybook.js.org/docs/react/why-storybook

[4] https://www.figma.com/community/file/1152470363559982623

[5] https://www.figma.com/file/tf71M8MUWYlPEqzMkIuzMx/50-Colour-Palettes-(Community)?node-id=4%3A3750

[6] https://uxtools.co/survey/2021#design-systems

[7] https://www.invisionapp.com/

[8] https://www.supernova.io/

[9] https://zeplin.io/

[10] https://zeroheight.com/