

Design Tokens for Equitable Data Representation

CSUN 2024



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Agenda:

- 1** **About the Rhonda Weiss Center**
Nichole Bui and Johan Rempel (5 min)
- 2** **What are Design Tokens?**
Marcelo Paiva (10 min)
- 3** **Design Tokens for Accessibility**
Marcelo Paiva (5 min)
- 4** **Demo**
Mark Zebley (10 min)
- 5** **Q&A**
All (5 min)

The Rhonda Weiss Center

Nichole Bui and Johan Rempel



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Weiss Center Mission

- **Accessibility is our highest priority.**
- Primary activities:
 - Create a free data reporting tool that allows States to publish **Individuals with Disabilities Education Act (IDEA)** data in ways that are accessible and manipulatable by persons with disabilities.
 - Provide Technical Assistance on making IDEA data reporting and publications accessible to persons with disabilities.



Achieving Better Accessibility for All

- The Weiss Center is dedicated to promoting equity and inclusion for students and individuals with disabilities.
- Our goal is to provide individuals with disabilities full and equal access to IDEA Part B and Part C data in accessible formats, exceeding 508 compliance.



Involving People with Disability

- **Conducted 4 sessions across country to collect inputs for the tool.**
 - 80 total participants.
 - Included persons with blindness, low vision, motor impairment, neurodivergent, and deafness disabilities.
- **Conducted usability studies to collect feedback on design concepts.**
 - 22 participants year-to-date.
 - Included persons with blindness, low vision, motor impairment, and neurodivergent disabilities.

What are Design Tokens?

Marcelo Paiva



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA

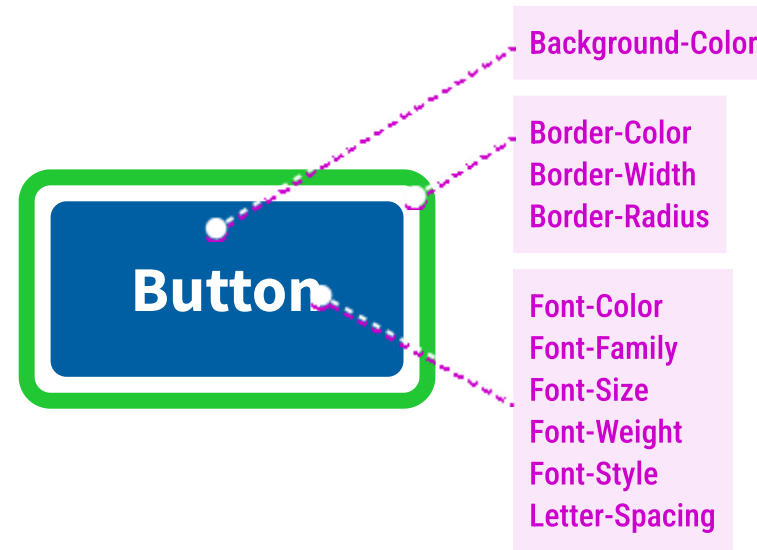


The anatomy of a button

Button

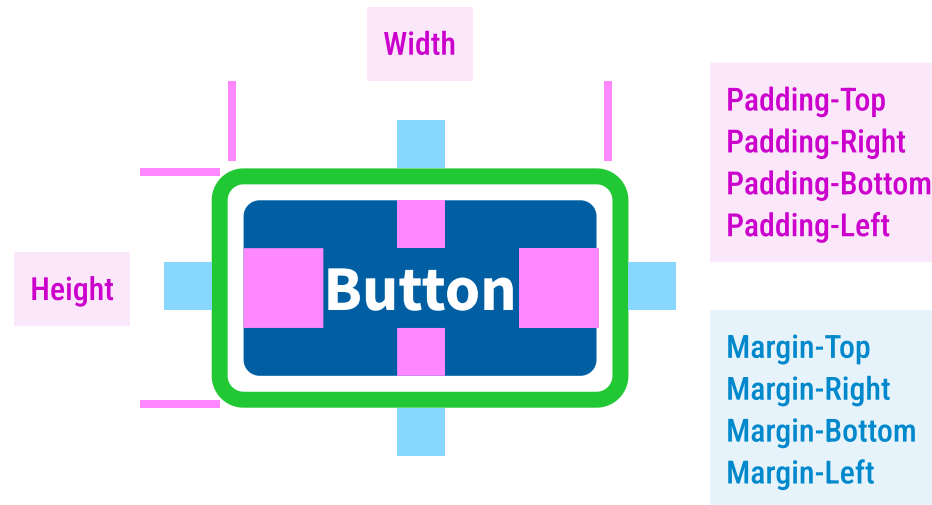


Selection of colors, text styles...





... and spacing are tokens of decisions



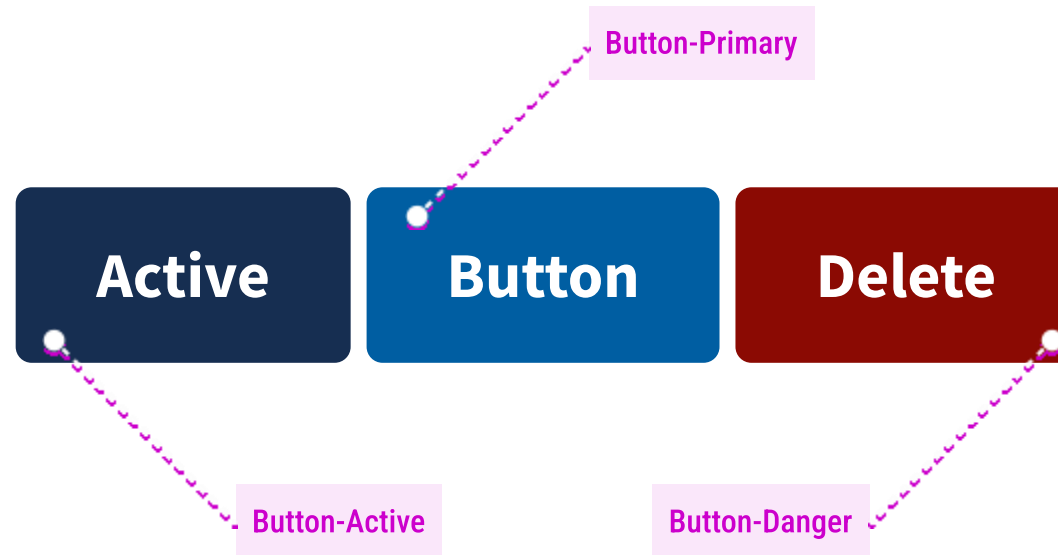


Design tokens are like **ingredients** for a website.

Specifies things like colors, text styles, and how elements should be spaced, ensuring everything looks consistent across the site.

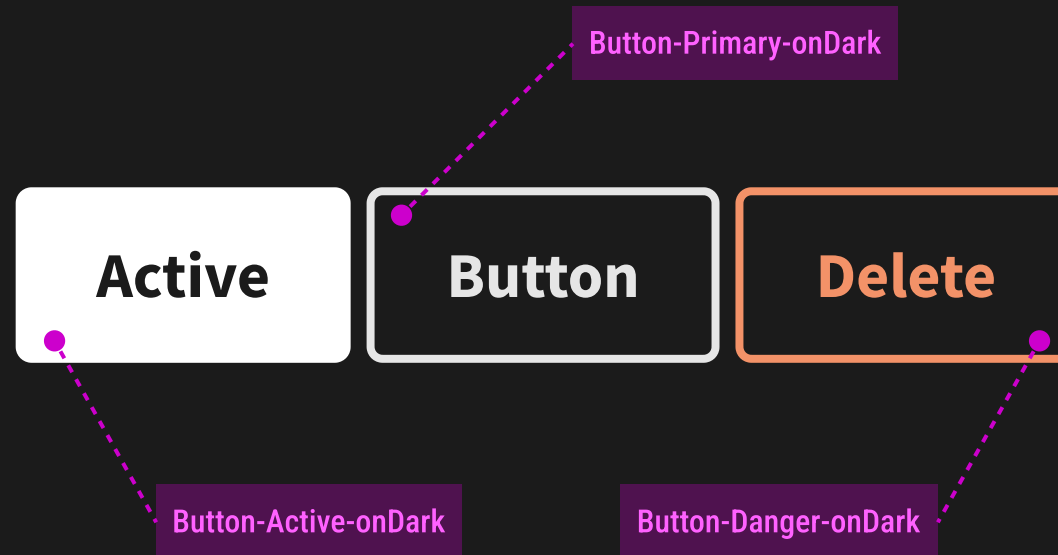


Buttons have other variations





And different layout themes





Hundreds of design decisions

Department of web accessibility

Section ▾ Section ▴ Link

<Navigation link>

<Navigation link>

<Navigation link>

<Navigation link>

<Navigation link>

<Navigation link>

<A very long navigation link that goes onto two lines>

<Navigation link>

<Navigation link>

<Navigation link>

<Navigation link>

<Navigation link>

Secondary link | Another secondary link

Radio item

This is optional text that can be used to describe the label in more detail.

Radio item

This is optional text that can be used to describe the label in more detail.

Radio item

This is optional text that can be used to describe the label in more detail.

Are you sure you want to continue?

You have unsaved changes that will be lost.

Continue without saving Go back

domain.gov

An official website of the <Parent agency>

About <Parent shortname> FOIA requests Office of the Inspector General Privacy Policy

Accessibility support No FEAR Act data Performance reports

Looking for U.S. government information and services? Visit [USA.gov](#)

3xs	2	Tallahassee	13px	h6
2xs	3	Tallahassee	14px	//
xs	4	Tallahassee	15px	h5
sm	5	Tallahassee	16px	h4 + body
md	6	Tallahassee	17px	//
lg	9	Tallahassee	22px	h3 + intro
xl	12	Tallahassee	32px	h2
2xl	14	Tallahassee	42px	h1
3xl	15	Tallahassee	48px	Display

Card title

Smiley was monstrous proud of his frog, and well he might be, for fellers that had traveled and been everywhere, all said he laid over any frog that ever they see.

Button

Dropdown label *

Helper text

- Select -

Option A

Option B

Text input label

mm/dd/yyyy

<< < April 2020 > >>

S M T W Th F S

29 30 31 1 2 3 4

5 6 7 8 9 10 11

12 13 14 15 16 17 18

19 20 21 22 23 24 25

26 27 28 29 30 1 2

Button

Hover

Active

Focus

aria-disabled

Button

Hover

Active

Focus

aria-disabled

Button

Hover

Active

Focus

aria-disabled

Button

Hover

Active

Focus

aria-disabled

Button

Hover

Active

Focus

aria-disabled



Multiple layouts

domain.gov

An official website of the United States government

Here's how you know

Privacy policy

Latest updates

Department of web accessibility

Section

Section

Link

Design Tokens for Accessibility

Design tokens empower us to craft universally accessible digital experiences, ensuring that every color, size, and space welcomes everyone.

Imagine a world where every color contrast enhances readability for those with visual impairments, where every font size adapts to the needs of users with dyslexia, and where every theme can be customized for optimal comfort.

Making unbiased design decisions:

- Group design decisions by disabilities
- Align design decisions with the WCAG's success criteria

Accessibility Settings

Token Sets by Disabilities

Return to top

Documentation

Features

Getting started

About us

Name of Agency

Agency Contact Center

(800) CALL-GOVT info@agency.gov

domain.gov

An official website of the <Parent agency>

About <Parent shortname>

FOIA requests

Office of the Inspector General

Privacy Policy

Accessibility support

No FEAR Act data

Performance reports

Looking for U.S. government information and services? Visit [USA.gov](#)

domain.gov

An official website of the United States government

Here's how you know

Privacy policy

Latest updates

Department of web accessibility

Section

Section

Link

Create account

Get started with an account.

* indicates a required field.

Email address *

Create password

Re-type password *

☐ I agree to the [terms and conditions](#).

Create account

A tagline that explains the benefit of creating an account.

Here's space for a longer description to introduce 3-5 easily scannable bullet points. Note that on mobile, this text block will bump below the Create Account form.

Value proposition 1: Vivamus nec velit sed leo scelerisque laoreet vestibulum.

Value proposition 2: Vivamus nec velit sed leo scelerisque laoreet vestibulum.

Value proposition 3: Vivamus nec velit sed leo scelerisque laoreet vestibulum.

Are you a federal employee?

If you are a federal employee or [other secondary user], please use [secondary Single Sign On (SSO)].

Launch secondary SSO

Return to top

Documentation

Features

Getting started

About us

Name of Agency

Agency Contact Center

(800) CALL-GOVT info@agency.gov

domain.gov

An official website of the <Parent agency>

About <Parent shortname>

FOIA requests

Office of the Inspector General

Privacy Policy

Accessibility support

No FEAR Act data

Performance reports

Looking for U.S. government information and services? Visit [USA.gov](#)

domain.gov

An official website of the United States government

Here's how you know

Privacy policy

Latest updates

Department of web accessibility

Section

Section

Link

Token Sets by Disabilities

Design tokens empower us to craft universally accessible digital experiences, ensuring that every color, size, and space welcomes everyone.

Low Vision

Design tokens aid low vision accessibility by enabling scalable font sizes, high-contrast color schemes, and clear visual hierarchies, ensuring interfaces are legible and navigable with or without assistive technologies.

Low vision token-set

Color Blindness

Design tokens improve accessibility for color blindness by ensuring high contrast, adding alternative cues like shapes or labels, using consistent semantic colors, and offering customizable themes, making interfaces clear and usable for all.

Color blindness token-set

Dyslexia

Design tokens can significantly enhance readability for individuals with dyslexia by standardizing text presentation through adjustable font sizes, typefaces optimized for dyslexia, ample line spacing, and minimal text crowding, improving their digital reading experience.

Dyslexia token-set

Return to top

Documentation

Features

Getting started

About us

Name of Agency

Agency Contact Center

(800) CALL-GOVT info@agency.gov

domain.gov

An official website of the <Parent agency>

About <Parent shortname>

FOIA requests

Office of the Inspector General

Privacy Policy

Accessibility support

No FEAR Act data

Performance reports

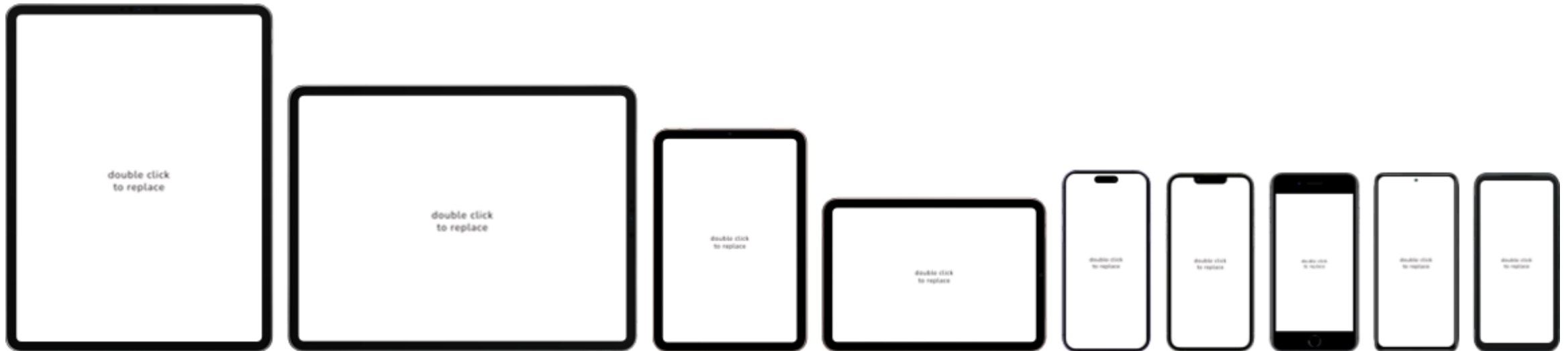
Looking for U.S. government information and services? Visit [USA.gov](#)

RHONDA WEISS CENTER FOR ACCESSIBLE IDEA DATA

15



Multiple devices





Multiple languages

Tokens de design para acessibilidade



Os tokens de design nos permitem criar experiências digitais universalmente acessíveis, garantindo que cada cor, tamanho e espaço recebam a todos.

Ajustar configurações

アクセシビリティのためのトークンの設計



デザイントークンにより、あらゆる色、サイズ、空間がすべての人を歓迎する、普遍的にアクセス可能なデジタルエクスペリエンスを構築できるようになります。

設定を調整する

Design Tokens for Accessibility



Design tokens empower us to craft universally accessible digital experiences, ensuring that every color, size, and space welcomes everyone.

Adjust Settings

طراحی توکن برای دسترسی



توکن‌های طراحی به ما قدرت می‌دهند تا تجربیات دیجیتالی قابل دسترسی جهانی را ایجاد کنیم و اطمینان حاصل کنیم که هر رنگ، اندازه و فضا از همه استقبال می‌کند.

تنظیمات را تنظیم کنید



In summary:
Design tokens are
design decisions.



Most often:

**Design tokens are biased
design decisions.**



**What if design tokens are
used to remove barriers?**

Accessibility Token Sets

Inclusive design decisions for all users.



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



**Token Set is a collection
of design tokens.**



What are Token Sets?

```
button-primary: (Token Set)  
  $theme-button-font-family: "Public Sans" (Design Token)  
  $theme-button-font-size: text-medium  
  $theme-button-background: color-primary  
  $theme-button-foreground: color-ink  
  $theme-button-border-radius: border-round-medium  
  $theme-button-small-width: size-medium  
  $theme-button-stroke-width: border-medium
```



Button



Button Large Token Set

```
button-primary-large:  
  $theme-button-font-family: "Public Sans"  
  $theme-button-font-size: text-large  
  $theme-button-background: color-primary  
  $theme-button-foreground: color-ink  
  $theme-button-border-radius: border-round-medium  
  $theme-button-small-width: size-large  
  $theme-button-stroke-width: border-large
```



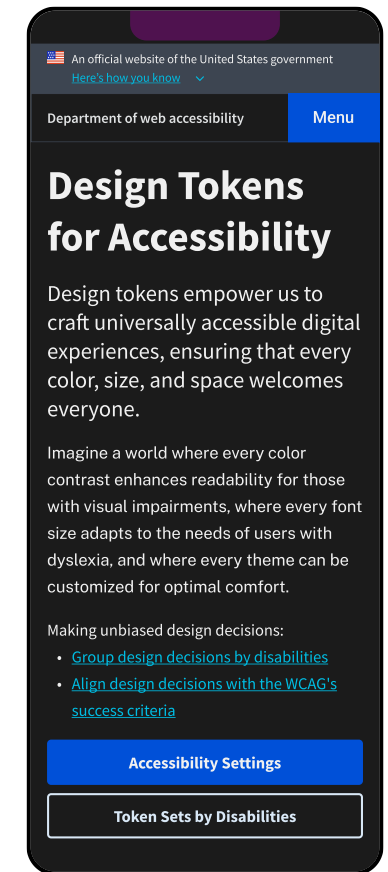
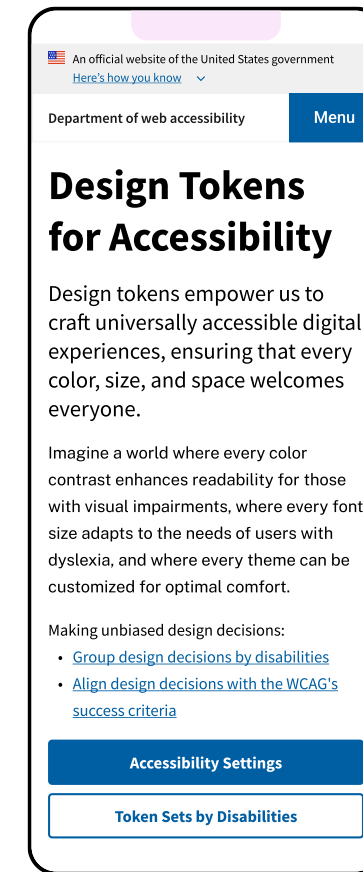
Button



Token set example: Light/Dark themes

Color tokens changes:

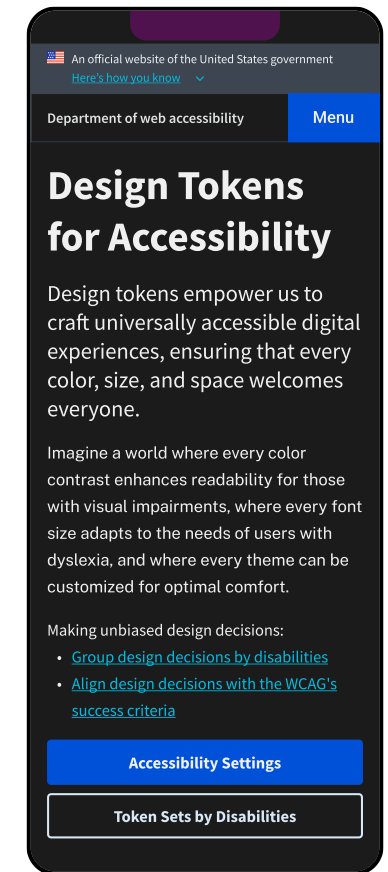
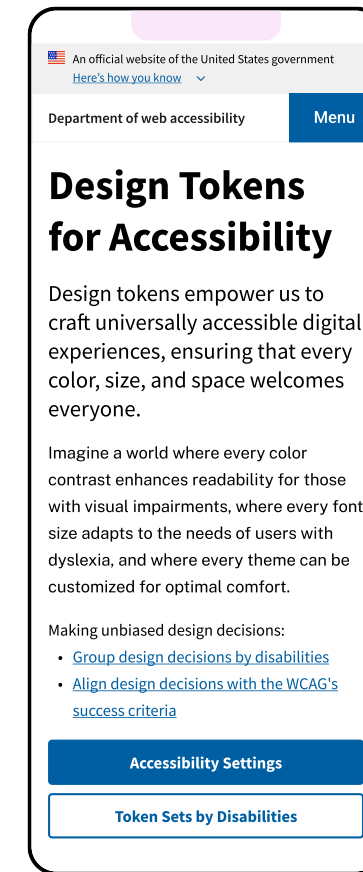
- **Light Theme:** Defined by lighter background colors, with darker text colors.
- **Dark Theme:** Dark background, with light text colors.





Theme Switch: Accessibility benefits

- Offering both dark and light themes sets caters to diverse user preferences, allowing individuals to choose what works best for them.
- **Light themes** are easier to read in bright environments.
- **Dark themes** are easier on the eyes, in low-light conditions, reducing eye strain and fatigue.





Token Set: Low-vision

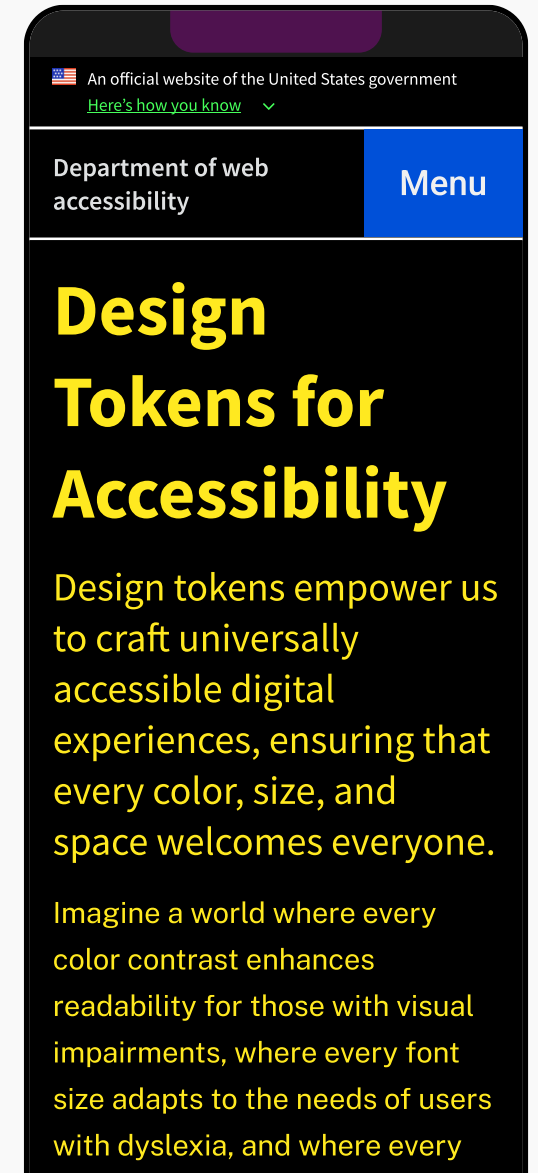
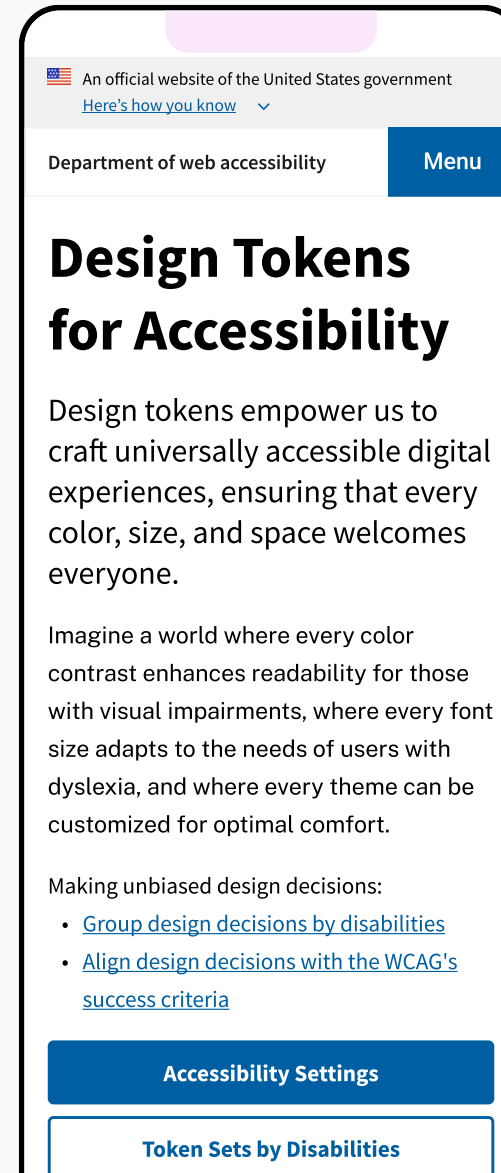
Design tokens aid low vision accessibility by enabling:

scalable font sizes,

high-contrast color schemes,

and clear visual hierarchies,

ensuring interfaces are legible and navigable with or without assistive technologies.





Token Set: Dyslexia

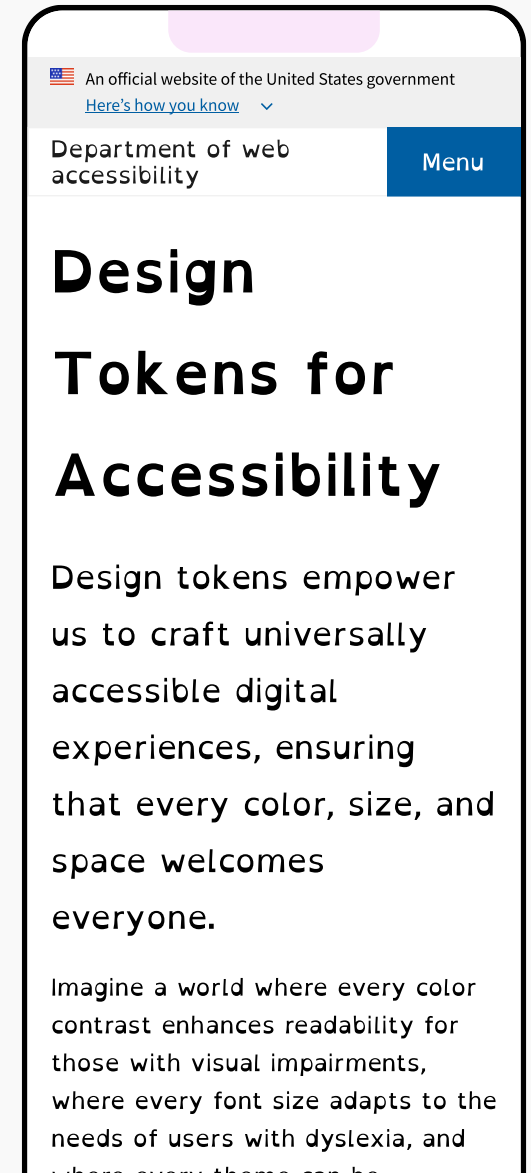
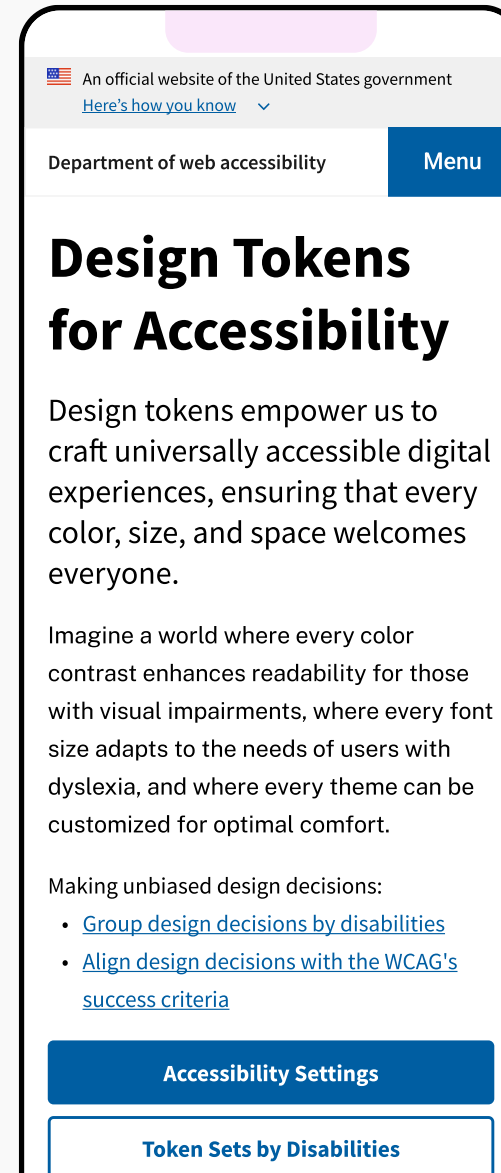
Design tokens can significantly enhance readability for individuals with dyslexia by providing options to change their preferences:

adjustable font sizes,

typefaces optimized for dyslexia,

ample line spacing

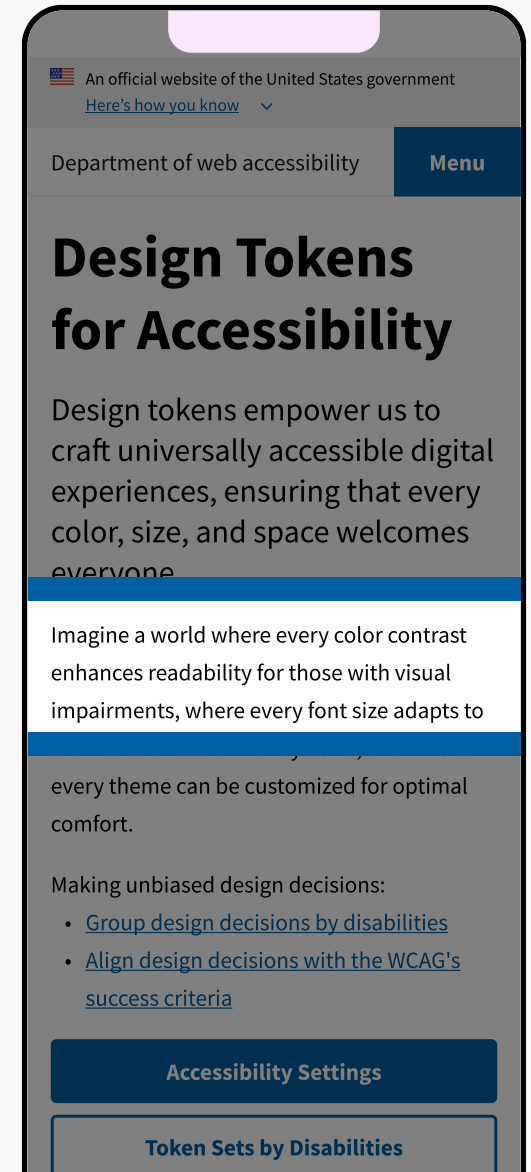
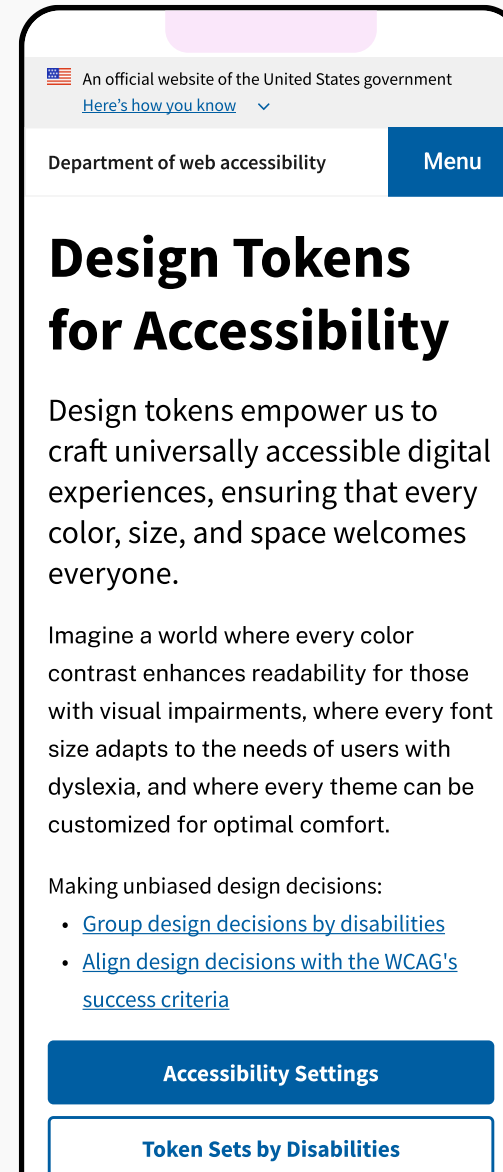
improving their reading experience.





Token Set: ADHD

Design tokens streamline digital experiences for ADHD by enabling customizable, **distraction-reduced interfaces that enhance focus** and navigation through consistent designs and controlled interactive elements.



Demo

Mark Zebley



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Questions

This presentation is available via the QR code displayed on this slide.

bit.ly/weiss-csun-2024



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Come Talk to Us

We are sharing our experiences at
the Exhibit Hall:

Booth 417



Usability Studies

- Participate in our user research sessions:
 - See our concepts,
 - Evaluate and contribute to ideas,
 - Review early prototypes, and
 - Co-design with us and provide timely feedback.
- <https://bit.ly/weiss-research>





Contact Us

Nichole Bui, Technology Lead – nbui@aemcorp.com

Marcelo Paiva, UX and Accessibility – mpaiva@aemcorp.com

Johan Rempel, Co-director – jrempel3@gatech.edu

Mark Zebley, Front-end development – mzebley@aemcorp.com

Visit our website at weissta.org

Thank you!

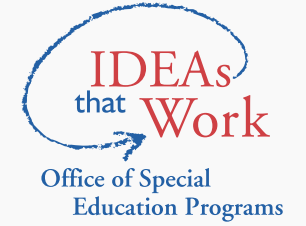
The contents of this presentation were developed under a grant from the US Department of Education, H373Q220002. However, those contents do not necessarily represent the policy of the US Department of Education, and you should not assume endorsement by the Federal Government. Project Officer: Eric Caruso.



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Appendix

Additional resources.

Accessibility Token Sets (Examples)

Inclusive design decisions for all users.

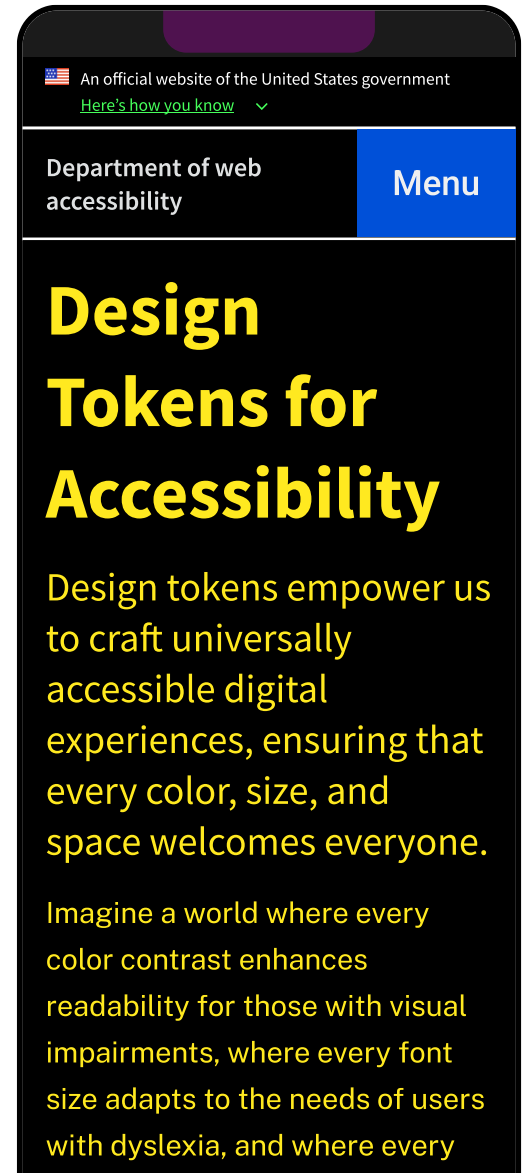


RHONDA WEISS CENTER
FOR ACCESSIBLE IDEA DATA



Low-vision TokenSet

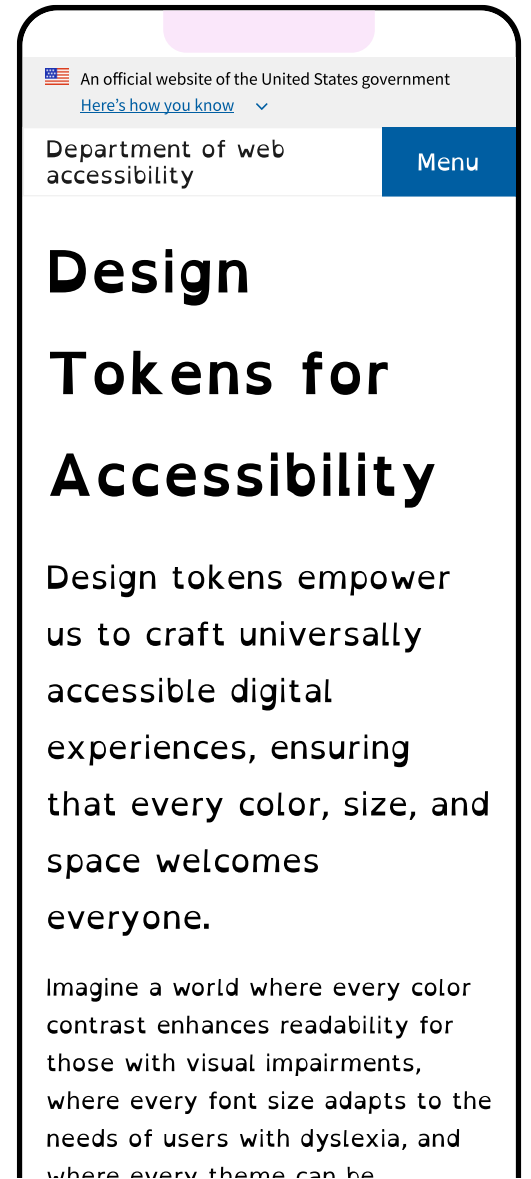
```
/* LowVisionTokenSet Example (CSS) */
:root {
  --LowVisionHighContrastText: #FFE920;
  --LowVisionHighContrastBackground: #000000;
  --LowVisionFocusIndicatorColor: #FF0000;
  --LowVisionNonTextContrast: #FFFFFF;
  --LowVisionLargeTextScale: 2.4;
  --LowVisionLineSpacing: 1.5em;
}
```





Dyslexia TokenSet

```
/* DyslexiaTokenSet Example (CSS) */
:root {
  --DyslexiaFriendlyFont: "OpenDyslexic", Arial, sans-serif;
  --DyslexiaFontSizingScale: 1.25;
  --DyslexiaLineSpacing: 1.5;
  --DyslexiaWordSpacing: 0.16em;
}
```





ADHD TokenSet

```
/* AdhdTokenSet Example (CSS) */
:root {
  --AdhdReadingLineOverlayColor: rgba(0, 0, 0, 0.5);
  --AdhdReadingLineDividerMaxHeight: 80vh;
  --AdhdReadingLineOverlayHeight: 90vh;
  --AdhdResizableHandleColor: #005EA2;
  --AdhdResizableHandleHeight: 16px;
  --AdhdResizableHandleWidth: 100vw;
  --AdhdReadingLineTopOffset: calc(50% - 80px);
}
```

