

Digital Equity & Accessibility

Presented by the MDOD IT Accessibility Initiative
& the DoIT Office of Accessibility



Introductions

- Stephen Polacek
- MD Dept. of Disabilities
- MDTAP - IT Accessibility Initiative
- Matt Hackert
- MD Dept of IT
- Office of Accessibility

Learning Objectives

What does it mean to be accessible

The basic principles of accessibility

Testing and Designing with accessibility in mind

What It Means To Be Accessible

Definitions

- Merriam-Webster: Capable of being reached; easy to speak or deal with; capable of being used or seen; capable of being understood or appreciated; capable of being influenced; *easily used or accessed by people with disabilities or adapted for use by people with disabilities*
- W3C: “Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them.”

Sources: 1. [Merriam-Webster.com](https://www.merriam-webster.com); 2. [W3C Web Accessibility Initiative Fundamentals](https://www.w3.org/WAI/fundamentals)

What do I intend my users to get from this and how do I make it as easy as possible for them to do so?

Consider this before, during, and after content creation or change

How does it help?

- Allows equal access to information and services for people with disabilities
 - Includes “temporary” disabilities (broken arm, missing glasses)
 - [The CDC states 26% of the US population has a disability](#)
- Improves user experiences and agency
 - Provides alternatives in certain situations (no headphones in public space)
- Required by law
 - [ADA Regulatory Standards](#); DoIT Web Policy (1-2024); MD Non Visual Access Clause

[Learn more about this from the W3C WAI](#)

Basic Principles

Web Content Accessibility Guidelines

Web Content Accessibility Guidelines (WCAG)


- Created by the World Wide Web Consortium (W3C)
- Provide a testable set of standards to serve as a baseline
 - Note: just meeting the standards does not guarantee accessibility
- Separated by publication date (2.0, 2.1, 2.2)
 - Each has three levels: A, AA, and AAA
- Each major area of disability (visual, auditory, physical, cognitive - later editions cover neurological and speech)
- Four principles: Perceivable, Operable, Understandable, and Robust

Perceivable - Alternative Text

- Images, frames, etc. need to have a text description
- Be accurate and concise; don't add interpretation
 - What is the image conveying
- Limit description to a few words to a few sentences if needed
- Avoid redundancy
 - Never use "Image of..." or "Picture of..."
- Decorative images should be marked as such
- Images that are links should instead state the link destination

← Edit photo Save

ALT



Description 178 / 1,000

A small white mug with a tiny loop handle, with a shot of deep brown espresso and a light brown crema on top. The mug sits on a small white saucer on a medium brown wooden table.

[What is alt text?](#)

Perceivable - Color Use and Contrast

- Avoid using color as the only indicator (links, emphasis, icons)
 - Underline or outline
 - Symbols
 - Patterns (charts)
- Color contrast for text to background should be a 4.5:1 ratio
 - Font size can impact this but is adjustable
 - AAA standard is 7:1
- This is a low color contrast example.
 - The above text is a 2.5:1 ratio. It is insufficient for its font size.
- This is a high contrast example on the same background.
 - This text is at the minimum 4.5:1 ratio.

Operable - Keyboard and AT

- Content must be reachable and usable by just the keyboard - common need for physical disabilities
 - Screen readers also use keyboard - commonalities
 - Need to also know where we are when we move via keyboard - visual focus indication
- Users generally know how to work around these common problems but we want to provide them with a good experience, not an irritating one

This version:

<https://www.w3.org/TR/2023/REC-WCAG21-20230921/>

Latest published version:

<https://www.w3.org/TR/WCAG21/>

Latest editor's draft:

<https://w3c.github.io/wcag/guidelines/22/>

Operable - Headings and Structure

- Headings provide a method for finding content quickly
 - Both visible and programmatic - large impact on AT users
 - Conversely: too many headings used for emphasis "muddy the waters"
 - Use headings to signify content relation
 - Create an outline using headings to easily identify blocks of content and subsets
 - Ex: A heading 2 starts a subject; subsets are started with a heading 3
- `<h1>` Welcome to Our Site
 - `<h2>` Our Services
 - `<h3>` Loan Program
 - `<h3>` IT Accessibility
 - `<h3>` Community Development
 - `<h2>` News and Events
 - `<h3>` Community Conference

Understandable - Readable and Predictable

Link Descriptions

- Use phrases for description and good targeting
- Don't hide links visually - doesn't hide them from AT - remove completely

Element Behaviors

- Use titles to add additional info about behavior (open in new window, dialog, etc.)
- Inputs - opening a menu allows user to move into menu immediately
 - Do not automatically submit or record information

Robust - AT Compatibility

- Voice, eye gaze, screen readers, and other control inputs require proper coding (i.e. a link is coded as a link and not a button, or vice versa)
- Ensure feedback is given to users
 - Error messages, content changes on input are announced, etc.
- Provide alternatives (complex interactive widgets); communicate custom shortcuts easily

Testing & Designing

Automated Testing

Benefits

- Run through a page or entire site quickly
- Find errors in code and repetitions of errors
- Useful for maintenance and monitoring

Challenges

- Unable to consider context or judge quality
- Cannot mimic a user workflow or navigation methods

Examples

- WAVE (WebAim)
- aXe (Deque)
- ANDI (Section 508)
- SiteImprove
- JAWSInspect
- Accessibility Checker (Adobe and Microsoft - documents)

Manual Inspection

Benefits

- Assess experience and quality (descriptions, interactions)
- Find errors automated testing cannot
- Best for in-depth remediation and improvement

Challenges

- Time-consuming, expensive (if contracting)
- Requires more knowledge and training for different types (AT use)
- Cannot handle large-scale reasonably

Examples

- Visual Inspection - reading order, focus indication
- Keyboard Navigation - pressing TAB to move around, follow order of operations
- Assistive Technology - screen reader, voice control, etc.

Start Simple

- Visual Inspection
 - Anything appear low contrast?
 - Are links easily visible?
 - Headings and structure is clear and easy to follow?
- Interaction
 - Can you reach all links and buttons via TAB?
 - Do you know where you are (focus indication)?
 - Order of operations - does opening a menu let you move into that menu or does it move to a different item?
 - Anything unexpected happen when you click a button or link?

ANDI focusable elements ▾ tab order ⓘ title attributes ⓘ

Element: <a>
Accessibility Components: 1
innerText: Standards
ANDI Output:
👤 Standards

Focusable Elements Found: 100
AccessKeys: { 1 2 0 }
Accessibility Alerts: 1
• Elements with No Accessible Name: (1)

W3C Leading the web to its full potential

STANDARDS PARTICIPATE MEMBERSHIP ABOUT W3C

WEB FOR ALL

- Accessibility
- Internationalization
- Web Security
- Privacy

WEB AND INDUSTRY

- Automotive and Transportation
- Entertainment (TV and Broadcasting)

W3C welcomes feedback on the beta of its new website
27 February 2023 | Archive

W3C invites public feedback on a beta release of the W3C website redesign. The new site features a cleaner and more modern look, a simplified information architecture, improved accessibility, and more integration throughout the site. Once the beta of the English site has concluded, we will offer sites in Japanese and Chinese.

The scope of the redesign is limited to most of our public pages, but we will gradually work to include the rest of the site.

You can read a bit more on the beta and its context in the [W3C blog post](#), and about the redesign work and process in [Studio 24's blog post](#). We look forward to your feedback.

ABOUT W3C

The World Wide Web Consortium (W3C) is an international community that develops open standards to ensure the long-term growth of the Web.

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