Section 508 Guidelines

Following rules mindlessly [a compliance mind-set] is unlikely to lead to a truly accessible site. It’s important to think through your design with disabled users in mind. However, keeping the main 508 guidelines in mind as you work makes sense. Each of the “rules” listed below is drawn from Cornell’s draft accessibility policy.

Each is also explained in detail in the Web-Accessibility Primer:
- Provide a text equivalent for each non-text element, for example, ALT, longdesc, or in the element content.
- Synchronize equivalent alternatives for multimedia presentations with the original presentation.
- Design web pages so that all information conveyed with color is also available without color, for example, from context or markup.
- Organize documents so that they are readable without an associated style sheet.
- Provide redundant text links for each active region of a server-side image map.
- Identify row and column headers for data tables.
- Use markup to associate data cells and header cells for data tables with two or more logical levels of row or column headings.
- Title frames with text that facilitates frame identification and navigation.
- Avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
- When compliance cannot be accomplished in any other way, provide a text-only page with equivalent information or functionality. Update the content of the text-only page whenever the primary page changes.
- When pages utilize scripting languages to display content or to create interface elements, identify the information provided by the script in functional text that can be read by assistive technology.
- When a web page requires an applet, plug-in, or other application on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with § 1194.21 (a) through (l).
- When electronic forms are designed to be completed online, people using assistive technology should be able to access the information, field elements, and functionality required to complete and submit the form including all directions and cues.
- Provide a method for users to skip repetitive navigation links.
- When a timed response is required, alert the user and provide sufficient time for them to indicate more time is required.

In the Primer: pages 54 through 55.

Test It / Try It

Some accessibility concepts are easier to understand if you can see the effects for yourself. Online tools that simulate the experience of people with different disabilities and that evaluate your pages for accessibility can add to your understanding.

Some sites where you can see simulations or test your own sites are:
- Screen Readers: Explanation of how screen readers “see” text and links to trial versions of screen readers www.webaim.org/techniques/screenreader/
- Color blind accessibility: Simulation of what your site looks like for people with different types of colourblindness www.vischeck.com
- HTML headings: Checks that your site uses HTML headings to provide structure www.validator.w3.org/detailed.html

Learn More

Online courses and tutorials are available from:
- Access E-Learning: Extensive. Includes practice labs on disabilities, creating an accessibility plan, and specific programs www.accesselearning.net
- Web Accessibility 101: Topics organized by 508 guideline. Includes evaluating for accessibility. www.dot.wisc.edu/accessibility/online-course/start.htm
- NY State Forum IT Accessibility Curriculum: Introductory information and in-depth topic discussions. Includes sample files to demonstrate concepts www.rrsfrm.org/accessibility/resources/cuim参谋

Courses in human computer interaction, focusing on the design of user interfaces and software from the user’s point of view and communication via computer systems, are available at Cornell www.hci.cornell.edu/courses/courses.htm

Use the validator tool to see HTML headings in outline form.

Disabilities that Affect Web Use (20%)

Up to 20% of Americans have some kind of disability. Web use can be affected by disabilities in:

<table>
<thead>
<tr>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness, low vision, color blindness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deafness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability to use a mouse, slow response time, limited fine motor control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning disabilities, inability to focus on lots of data</td>
</tr>
</tbody>
</table>

Accessible Design is Good Design

Strategies to make web sites more accessible to people with disabilities make sites more usable for everyone. Curb cuts are designed to ease street crossing for people in wheelchairs. Those same curb cuts accommodate many other people and functions. Accessible design is good design, in every sense of the word.

Common Trouble Spots

Certain aspects of your documents are likely to cause difficulties for people with disabilities. Pay special attention to these elements:
- Acronyms
- Links
- Flickering images
- ALT text for images
- Tables
- Forms
- Audio and video media
- Colors
- Timed responses

On the web: www.webaim.org/articles/userperspective/
In the Primer: pages 16 through 22.

Think Access

Cornell’s web accessibility policy relies on three key principles:

- Moral: Making web sites more readily available to more people is the right thing to do.
- Practical: Accessible design makes a site more usable for everyone. For example, cleaner navigation and alternative media options benefit all users.
- Legal: The Federal Government already requires its own sites to be accessible to people with disabilities. It probably won’t be long before state-funded organizations are required to meet accessibility standards.

In the Primer: page 8.

Start with Fundamentals

Using the standard tools of good writing and design goes a long way toward creating accessible information.

- Structure and styles
- Labels
- Familiar, readable fonts
- High-contrast colors
- Generous margins and white space
- Logical presentation of ideas
- Active voice
- Short sentences, simple language

On the web: www.usability.gov or www.useit.com
In the Primer: pages 16 and 22.
**Labeling and Structure: Building Blocks for Accessibility**

Labels and structure make documents more readable and accessible to all users, especially those with cognitive difficulties. Labels and structure should be added both to the text and to the code underlying the page. Machine-readable structure is essential for people who use screen readers.

**Avoid Flickering Images**

Flickering images are not just irritating, for some people they are dangerous. Rapid strobing, flickering, or flashing effects can cause seizures in some people.

- The larger the flashing image, the higher the chance of a problem.
- Some still images, such as high-contrast graphics with tight parallel lines, may cause a similar reaction.

**Smart Links**

Links are integral to just about any web page. Accessible links are more clear and useful for all visitors.

- Identify links with color and additional formats like underlining to highlight them for visitors with low vision or color blindness.
- Links and clickable “hot spots” need to be large enough for visitors with limited motor control to click.
- Link text should make sense out of context. Some visitors will have their screen reader set to read just the links, skipping all other text. If the link text is “Click here,” the links won’t make sense. Use descriptive language, for example, “Click here for phone numbers of department contacts.”

**Color Can Clarify or Complicate**

Color can add clarity and structure, however, color alone is not sufficient. For example, you may make links on a web page a different color than regular text, but you should also underline them. The underlining provides information to people who have low vision or who are color blind. Keep contrast in mind when designing the color scheme for your information. High-contrast colors are easier for all visitors to read.

- Use color in tandem with other formats to convey meaning; for example, headings are blue and tagged with a heading style.
- High-contrast colors [blue, yellow, black, and white] are easier for all visitors to read.
- Avoid red and green because they present a challenge to many color blind visitors.

**ALT Text Makes Illustrations Useful**

ALT text is the only way screen-reader users have to access non-text content on your pages. Well-implemented ALT text not only opens up your images to screen-reader users, but also minimizes hassles for them. If you don’t insert empty ALT tags, the screen reader will say, “image,” and the user will wonder what they’re missing.

- If you’ve illustrated a concept, ALT text provides information usable by screen readers. You can add ALT text in HTML and most applications (including Word and PowerPoint).
- If an illustration does not convey content [for example, a decorative element], use empty ALT tags on HTML pages to tell the screen-reader to skip the illustration.
- If the illustration is repeating information found in the text, use empty ALT tags on HTML pages to tell the screen-reader to skip the illustration. (Otherwise the screen-reader user will hear the same information twice.)

**Tables Need Thoughtful Design**

Using tables to present data or to provide page layout in HTML can present challenges for visitors who use screen readers.

- Remember that screen readers read across table rows. This can cause difficulty if the table is designed to be read differently.
- Visitors with low vision may increase the size of text on the screen. Define rows and columns using percentages instead of fixed measurements to avoid distortion.
- Avoid sub-headings and cells that span more than one column or row.
- If the table cannot be redesigned to make it accessible, provide an alternative explanation of the information in the text.
- When necessary [for example, a course schedule] provide contact information for blind or low-vision visitors to get the information.

**Screen readers read information across tables. This can be difficult to understand.**

**Dept Code** | **Class #** | **Section**
---|---|---
BIO | 100 | 1
| 100 | 2
| 200 | 1
BUS | 100 | 1

Avoid cells that span more than one column or row.

**On a web page about New York State landmarks**

**ALT** = “The Statue of Liberty”

**On a web page about graphics in printed documents**

**ALT** = “Black and white clip art”

**On a web page about New York City, but used only for decoration**

**ALT** = “**”

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**In the Primer**: pages 16 and 24.

**In the Primer**: page 17.

**In the Primer**: pages 19, 26, and 41.

**In the Primer**: pages 17 and 39.

**In the Primer**: pages 16.