



Job Accommodation Network

Practical Solutions • Workplace Success

Technical Series

Tips for Designing Accessible Websites: Including Self-Assessment SNAP Tool

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ODEP

Office of Disability
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Preface

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JAN'S TECHNICAL SERIES

Introduction

JAN's Technical Series is designed to help those engaged in information and communication technologies (ICT). Individuals may be representatives of employers, designers, or those responsible for providing information technology infrastructures for various organizations and industries.

The Technical Series is a starting point in the accessible design process and may not address every situation. Accommodations, including those provided in the context of ICT, should be made on a case by case basis, considering individual limitations and accommodation needs. Those engaged in accessible ICT are encouraged to contact JAN to discuss specific situations in more detail.

For information on assistive technology and other accommodation ideas, visit JAN's Searchable Online Accommodation Resource (SOAR) at <http://AskJAN.org/soar>.

Information about Website Design

Millions of individuals connect to the Internet for quick access to vast amounts of information. Some Website designers still overlook accessibility. For people with disabilities, there is still a great deal of information, especially multimedia applications, on the Internet that is not accessible to them because of poor Webpage design.

Accessibility is not always buried in the lines of HTML, CSS, XHTML, PHP, or other code written for a Website. Accessibility lies with the lead Webpage designer, the Webmaster, and the content manager; however, the Webmaster is responsible for programming for accessibility. What does this mean? This means the Webmaster must publish pages that are accessible enough for all visitors to explore while creative enough that visitors remain interested. The Webmaster can make the information as user friendly as possible and still organize the information on the page to make it comprehensible. This approach leads to understanding and there is no more basic reason for having a Website than to transfer information in an understandable manner. Programming many bells and whistles may confuse users and leave them frustrated. People are not necessarily comfortable with distractions, and complicated applications can lead to problems with comprehension as well as accessibility. Will visitors remember what the Webmaster wants them to remember or will they remember how fancy the page is?

Of utmost importance to organizations is their online application system. To assist with making online application systems accessible, follow JAN's SNAP Process: 1) **S**elf assess your online systems with your selected team, 2) **N**o is not an answer to accessibility modifications, 3) **A**ccept challenges from all types of users (internal and external), and 4) **P**rioritize accessibility first with support from top management. How can you work through this process? Use the 15 step SNAP Tool JAN makes available to

self assess your online application system (<http://AskJAN.org/media/downloads/SNAPTool.xls>) and follow JAN's 10 tips to making your Website accessible.

The following information gives a brief overview of 10 vital tips to consider when designing a Website, including quick, testing, and design tips for certain aspects of a Website to ensure that applications are accessible.

Tip 1. Review online application systems. For employers who are providing materials to job seekers and employees, be sure that the online human resource (HR) system being used is accessible. It is imperative that recruiting tools, applications, calendars, benefits forms, timesheets, and leave requests are accessible. Unusable online systems create barriers for applicants and employees with disabilities.

Quick Tip: For an online HR system that has forms or other unavoidable custom designs, give alternative options such as e-mail, fax, telephone, or mail, to provide the requested information.

Testing Tip: Have an expert use the SNAP Tool (<http://AskJAN.org/media/downloads/SNAPTool.xls>) that JAN makes available to review the online application system.

Design Tip: Display the company's equal employment opportunity (EEO) policy statement in a place where a user can access it within three clicks of the primary Webpage. With this, explain to people with disabilities how they can get help using the online HR system and where to get reasonable accommodation if they cannot apply online.

Tip 2: Use text descriptions for visual material. For graphics, program text-only alternatives (ALT-tags), and use ALT-tags supported by a variety of browsers. These text descriptions are used for images when images cannot be seen by the user. The ALT-tags should be descriptive of the image, but concise for the reader, i.e., less than 125 characters.

Quick Tip: Hold your mouse cursor over an image to visually check that a mouseover triggers a text box with a description of the image.

Testing Tip: Purchase screen reading software and test pages across a Website on a consistent basis. For information on screen reading software, visit JAN's SOAR at: <http://AskJAN.org/cgi-win/OrgQuery.exe?Vis11>. Many screen reading programs have time-limited free demonstrations that can be used for this purpose as well. Also, download NonVisual Desktop Access (NVDA), a free and open source screen reader for the Microsoft Windows operating system (<http://www.nvda-project.org>).

Design Tip: Repetitive text descriptions for nonessential visual material are unnecessary. For example, the use of bullets to outline material can be helpful for a visual reader; however, if every bullet used on a Webpage has alternative text associated with it and a user is accessing the page with screen reading software, the software will read every alternative text, slowing the user's ability to access essential material on the page. Any bullet or other nonessential visual material should be assigned a null alternative text attribute, which is written as ALT="" (ALT equals quote quote, with no space between the quotes). This means that the visual material will have an alternate text value, but that value will be empty. This empty value prompts screen readers to ignore the image completely. If you omit the alternative text, some screen readers will read the file name of the image.

Tip 3: Caption audio and video. For all audio and video applications, including podcasts, Flash trainings, and YouTube videos, use captions. There are three basic types of captions: audio, open, and closed. Captions make multimedia accessible to individuals with no or limited vision, no or limited hearing, and cognitive or neurological limitations.

To create an accessible video for someone with no or limited vision, creators may want to consider providing audio descriptions, additional narration beyond the traditional audio that is designed to illustrate in words what is happening visually. When designing visuals for a video be sure to use enough contrast so that they are crisp and visible to users with low vision. And, filming well lit footage in high definition can also help your footage be easier to view.

To create an accessible video for someone with no or limited hearing, creators should provide open or closed captions that describe the audio verbatim, including non-speech elements such as music or noise. These captions are vital for all video. Open captions are those that are viewable at all times, and closed captions are viewable only to users who activate them.

To create an accessible video for someone with cognitive or neurological limitations, reducing complicated transitions, blinking attributes, extensive text, and extraneous noises can be helpful for individuals who are easily distracted or have difficulty absorbing a great deal of information quickly.

To create accessible audio, captions for audio files can be embedded into the video and provided simultaneously and visually to the viewer. Another alternative is to provide a separate text file transcript.

Quick Tip: If audio and video are designed in-house, use a service to caption the audio and provide timing durations in a compatible file (i.e., xml). Then, use this file to embed the captions within existing audio and video files. For information on

captioning services, visit JAN's SOAR at: <http://AskJAN.org/cgi-win/OrgQuery.exe?Sol492>.

Testing Tip: When using open or closed captions, consider the following:

- Using a font size that is a minimum of 16 point;
- Using a font color that is white on black or yellow on black;
- Indicating in parentheses at the beginning of the video whether the narrator is female or male, i.e., (Female Narrator);
- Indicating with an icon in the beginning whether open or closed captions are used;
- Indicating in parentheses elements where the narrator is reading the screen, i.e., (Narrator reading screen text.); and
- Indicating background or non-speaking elements, i.e., using a music note as a captioning attribute to highlight background music.

Design Tip: Writing a detailed audio script that provides information on what is happening visually during the video can be helpful and may limit the need for audio captions. This can be done creatively by working what is happening on the screen into the message distributed. For examples of accessible video, visit JAN's YouTube channel at: <http://www.youtube.com/user/JANinformation>.

Tip 4: Maintain consistent page design. Keeping a standard header and footer that includes navigational information and statements on accessibility, disclaimer, copyright, site map, and privacy will decrease confusion from page to page.

Quick Tip: When designing a Website, place all style sheets in one Website directory for consistency. Access these style sheets periodically to review consistent page design.

Testing Tip: Individuals with various impairments may have difficulty tracking page designs that change often. Cognitive-related design elements that assist with lessening problems with orientation, distractibility, and perception are the most often overlooked. For information on accommodation ideas for individuals with cognitive impairments, visit JAN's Accommodation Information by Disability: A to Z at: <http://AskJAN.org/media/cogn.htm>.

Design Tip: Headers, footers, content, and page navigation should be included in style sheets. Program a "skip navigation" link that is visible or invisible to users, but make it the first link in each Webpage.

Tip 5: Minimize reliance on color. For individuals who have color vision deficiency (CVD), sometimes referred to as color blindness, it is difficult to distinguish between some colors and shades. Most people with this condition can identify some colors; however, CVD most often involves problems distinguishing reds / greens and yellows /

blues. Regardless of color, a Website should have enough contrast so the background and text are distinct, and there should be other means of conveying information besides color.

Quick Tip: To check a Website for color reliance, change the browser's color settings so that it displays black and white only, ignoring the color settings of the Webpage. Make sure that the same information from the Webpage is viewable as it is by viewing it in color. For example, if a form on a Website has required fields, do not just change the color of the field to indicate that a value was left out - use a text marker as well such as "required field" or similar text.

Testing Tip: There are tools that can be used to simulate what a Website would look like to someone with CVD. The Color Laboratory, provided by the HTML Writers Guild's AWARE (Accessible Web Authoring Resources and Education) Center (<http://colorlab.wickline.org/colorblind/colorlab/>) will allow you to select colors, see how they appear next to one another, and see what they look like in various foreground/background combinations. In addition, the Colorblind Design Evaluation from WebAIM at Center for Persons with Disabilities (<http://newmanservices.com/colorblind/default.asp>) gives the option of filtering to change the color values in HTML and then displaying the page. However, this tool removes style sheets and ignores images. When designing graphics for a Website, there are also plug-ins available for Photoshop to simulate color deficiency.

Design Tip: Computer generated testers show visually what Websites will look like to someone with CVD. Using consistent colors on a Website, including graphics, and comparing to a color chart can be helpful during the design process, i.e., PMS (Pantone Matching System), CMYK (Cyan-Magenta-Yellow-black), and HTML color codes.

Tip 6: Allow keyboard navigation. Programming keyboard navigation into a Website will enable individuals who use assistive technologies and / or have fine motor, vision, or cognitive impairments to easily navigate a Website. Some assistive technologies rely on keyboard controls instead of mouse controls, and specifying tab order will ensure that navigating with a keyboard or mouse is logical. Using design templates helps with consistency, but allowing users who are familiar with menus and other navigational elements to skip this content, including links, is important. Skipping navigational links will allow those individuals using assistive technologies to quickly move through a Website.

Quick Tip: Use the TAB key on the keyboard to navigate a Website.

Testing Tip: Test a TAB sequence with multiple browsers. Many older browsers will read links only in the order they appear in a Webpage.

Design Tip: A TAB order is often assigned by default during the initial programming of a Website. Override this default TAB order with a TAB index attribute, and provide a skip option if applicable.

Tip 7: Program items with audio, video, motion, and timing elements with controls. Program multimedia items and background content with on-demand options so that a user can control variants of sounds, visuals, and time limits. Use skins, default controller menus, with controls for sound such as mute, increase, and decrease volume options. For visuals, include the ability to pause, stop, go, and restart. For any moving objects, provide mechanisms for users to freeze their motion. Remove or allow the extension of any session time limits.

Quick Tip: Use a mouse to test each control element within the skins of all audio, video, and motion elements.

Testing Tip: Use screen reading software to access all audio, video, motion, and timing elements on a Website to be sure that all controls within their skins consistently work with TAB key access and do not reset while viewing.

Design Tip: Some skins may not accurately indicate the ability to control elements. Use and test all skins with buttons that are visible and contain ALT-tags. Never use content that blinks or flashes too quickly. Elements that blink more than three times per second could induce seizures. For forms, add checkboxes or radio buttons so users can request additional time to complete them.

Tip 8. Program the default human language of each page. Programming the default human language of a page allows assistive technologies, such as Braille translators and screen reading software, and browser add-ons to provide more accurate content to the user.

Quick Tip: Examine the HTML elements of the document by viewing the source code.

Testing Tip: Identify whether changes in language are programmed, e.g., changes from English to Spanish, by testing pages with multiple languages using screen reading software.

Design Tip: Specify the default language in the header of the Website's style sheets. When switching languages within a Webpage, use an additional language attribute to switch from one language to another.

Tip 9. Provide users with accessible documents. Provide fully accessible PDFs and Microsoft Office documents. Follow the previous tips for providing ALT-tags, captions, page design, color, and timing elements.

Quick Tip: Adobe Acrobat has a built-in accessibility check that will help find accessibility errors in PDF documents. This option is under the "Advanced" menu. Adobe Acrobat Reader's built-in screen reader Read Out Loud can also test reading order. While Microsoft Word does not have this feature, using styles to format text will help structure documents for individuals using screen readers. For PowerPoint files, text must be viewable in outline format. ALT-tags for graphics must be checked individually within each Microsoft Office document.

Testing Tip: To fully test your documents for accessibility, purchase screen reading software and access the document.

Design Tip: Prior to creating a document, review WebAIM's documents on creating accessible:

- PDFs (<http://www.webaim.org/techniques/acrobat/>),
- Microsoft Word documents (<http://www.webaim.org/techniques/word/>), and
- Microsoft PowerPoint files (<http://www.webaim.org/techniques/powerpoint/>).

Tip 10: Evaluate the Website. The final step of making an accessible site is to check the Website for accessibility. There are many tools available to streamline this process.

Quick Tip: Depending on the Web browser, there may be built-in tools or extensions available that can be used to quickly evaluate a Website.

For Microsoft Internet Explorer, use:

- Internet Explorer Developer Toolbar (for IE 6 and 7 – this functionality is built into IE 8) at <http://www.microsoft.com/downloads/en/details.aspx?familyid=95E06CBE-4940-4218-B75D-B8856FCED535&displaylang=en>
- AIS Web Accessibility Toolbar at <http://www.visionaustralia.org.au/ais/toolbar/>

For Mozilla Firefox, use:

- Total Validator at <http://www.totalvalidator.com/tool/extension.html>
- Web Developer at <http://chrispederick.com/work/web-developer/>

For Chrome, use:

- Web Developer toolbar at <https://chrome.google.com/webstore/detail/bfbameneiokkbgdmiekhjnmfkcndhnm?hl=en-US>

For Opera, access a number of built-in accessibility tools. Look under the "View," "Style" menu to view some of those features.

Testing Tip: There are several online tools that can be used to test Websites for accessibility. These include the Functional Accessibility Evaluator (<http://fae.cita.uiuc.edu/>), WAVE (<http://wave.webaim.org/>), and Cynthia Says (<http://www.cynthiasays.com/>). There is also a Spanish-language accessibility tool TAW Online (<http://www.tawdis.net/>). The W3C Markup Validation Service (<http://validator.w3.org/>) can also be used to test the validity of a Website's code.

Design Tip: Automatic checking is not a substitute for manually testing a Website for accessibility, but these tools will help give a Website designer a starting point for making a Website accessible.

- **For additional resources related to online applications and Website accessibility, visit: <http://AskJAN.org/topics/onlineapps.htm>**

RESOURCES

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