Creating & Testing Accessible Websites with Dreamweaver MX
Windows/Macintosh

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Objectives

- Discuss target audiences for accessibility including users with severe visual impairment, lesser visual impairment, hearing impairments, mobility impairment and cognitive impairments.

- Briefly review federal Section 508 accessibility guidelines and other suggested guidelines.

- Configure Dreamweaver to turn on cues for inserting accessible code.

- Practice using a variety of accessibility testing tools including a text browser emulator, color vision emulators and accessibility reporting options such as LIFT.
Overview of Accessibility Requirements

Target Audiences

Severe Visual Impairments
These are users whose visual impairments are so severe that they are unable to read Websites on a screen. These users rely on screen readers which read textual elements aloud. Common screen readers include JAWS, HomePage Reader, Window Eyes and others.

Accommodations Needed
None of the screen readers can interpret images, image maps, animations or colors unless a textual alternative is supplied. Screen readers also need additional information to parse tables and frames for users. Finally, many screen readers are unable to parse instances of Javascript code including pop-up windows.

Hidden Audience
Users accessing the Web with cell phones or Palm Pilots may not be able to receive images. Some users may disable image downloading because of slow connections or disable Javascript to prevent pop-up windows. Some Internet providers outside the U.S. may only provide text-only browsers such as Lynx because of bandwidth issues.

Lesser Visual Impairments
These are users with visual impairments who are still able to read Web pages with a page zoomer. The primary tools for this audience is a page zoomer which may enlarge the page to 500% or more.

Accommodations Needed
Elements which can make pages more difficult to read are those with fixed small font sizes, low contrasting colors, elaborate or narrow fonts, reliance on images for buttons which pixelate (become fuzzy) when zoomed. Liquid layouts are generally preferred over fixed widths because they can accommodate different screen resolutions. Finally users may wish to implement custom stylesheets which support their needs better.

Hidden Audience
As visual acuity decreases with age, many older users may either drop their screen resolutions or wish to zoom a variety of Web pages. Also, most users prefer to read dark text on light backgrounds, especially for long passages of text.
Color Deficient Vision

Almost 10% of men and a smaller percentage of women suffer some form of color blindness, notably an inability to distinguish red and green.

Accommodations Needed

No special tools are needed, but Web developers need to be sure that any information with color cues, especially solid colors, should also have supplemental cues such as shape or text. In most cases, Web sites that are legible in gray scale will probably be usable for color blind users.

Mobility Impairments

For the Web, these are users who find it difficult to use a mouse may need to rely mouse alternatives such as a keyboard, voice recognition or other special devices such as puffers.

Accommodations Needed

No special tools are needed, but Web developers need to be sure that any information with color cues, especially solid colors, should also have supplemental cues such as shape or text. In most cases, Web sites that are legible in gray scale will probably be usable for color blind users.

Hidden Audience

Users with repetitive motion conditions such as carpal tunnel syndrome or those with hand or wrist injuries may also need to rely on mouse alternatives. Finally users on an unfamiliar system may find moving the mouse difficult at first.

Hearing Impairments

Users with hearing impairments are generally able to read most Web sites will have difficulties with audio or video with an audio track.

Accommodations Needed

All posted audio material should include a text-transcript. Videos with audio should preferably include a synchronized caption, although a text transcript is also acceptable.

Hidden Audience

Computers in public labs or large offices may have audio disabled or users may have difficulty with hearing a particular track.

Cognitive Impairments

Cognitive impairments include learning disabilities, the largest group of registered students with disabilities at Penn State.

Accommodations Needed

Consistent navigation, images and color coding may help these users. Some users with learning disabilities also use screen readers to facilitate comprehension. Many usability guidelines benefit users with cognitive impairments.
Section 508 Guidelines
http://usability.gov/accessibility/508.html

These are the requirements for all federal Web sites and are recommended for all official Penn State sites. These guidelines are not a list of HTML "do's and don'ts", but rather a list of accommodations that must be made for people with different disabilities. The technical implementation is left to the discretion of the developers, although some technical suggestions may be made in some cases.

Paragraph A

(Regulation) Text: A text equivalent for every non-text element shall be provided

Implementation: Use TITLE or ALT when available as a minimum. Provide longer text transcriptions and descriptions for more complex items.

Paragraph B

Text: Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation

Implementation: Use captioning software for video or Flash animations when possible.

Paragraph C

Text: Web pages shall be designed so that all information conveyed with color is also available without color

Implementation: Supplement color coding with other signals such as shape or text.

Paragraph D

Text: Documents shall be organized so they are readable without requiring an associated style sheet

Implementation: Use external stylesheets, but also make sure pages are structured with appropriate H tags to be readable with stylesheets disabled.

Paragraph E

Text: Redundant text links shall be provided for each active region of a server-side image map

Implementation: If you use server side image maps, provide a text based menu. But client side maps (those generated by Dreamweaver) are preferred (see next paragraph).
Paragraph F

Text: Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape

Implementation: Client side image maps are preferred unless they can only be implemented with server-side image maps. See the later sections of this handout for more details.

Paragraph G

Text: Row and column headers shall be identified for data tables

Implementation: Use the TH tags for column and row headers of data tables. See the later sections of this handout for more details.

Note: These are not needed for layout tables.

Paragraph H

Text: Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers

Implementation: Additional accessibility tags are need for very complex data tables with multiple levels and spanned columns.

Paragraph I

Text: Frames shall be titled with text that facilitates frame identification and navigation

Implementation: Use the TITLE attribute in the FRAME tag with meaningful frame titles (e.g. “Main Menu”, not “Frame 2”)

Paragraph J

Text: Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hertz (cycles per second) and lower than 55 Hertz

Implementation: Avoid rapidly blinking texts and animation.
Paragraph K

Text: A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of these standards, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

Implementation: Use a text-only site only as a last resort. The text-only site must be updated with the rest of the site or the site will be out of compliance. Text only can be a good option for alternatives to multimedia presentations.

Paragraph L

Text: When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology. Content must accessible on pages using scripts.

Implementation: Some screen readers are unable to process some types of JavaScript links, so a NOSCRIPIT or non scripted alternative must be provided.

Paragraph M

Text: When a web page requires that an applet, plug-in or other application be present 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)

Implementation:
1. Always provide a link to an accessible Web page where a user can download a plug-in.
2. Plug-ins used should allow you to create Section 508 compliant content. See vendors for details.

Paragraph N

Text: When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues

Implementation: Use new forms tags, such as LABEL and FIELDSET to facilitate accessibility

Paragraph O

Text: A method shall be provided that permits users to skip repetitive navigation links or very long lists of links

Implementation: Provide a “Skip Navigational Links” option, typically via link in an invisible graphic with a “Skip Links” ALT tag.
Paragraph P

Text: When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required

Implementation: Make redirects automatic. When migrating to a new Web address, provide a static link on the old page instead of a timed redirect.

Other Recommendations

Font Types and Sizes

1. Use fonts designed for a monitor such as Verdana, Georgia and Arial.

2. Avoid specifying absolute sizes (e.g. FONT SIZE= ”1” or “font-size: 12px” and use relative measures whenever possible such as FONT SIZE=-1 and “font-size: medium”).

3. Use H1, H2, H3 for headers and sub headers instead of manually increasing font sizes.

Text Links

Avoid using generic phrases like “Click Here” or multiple uses of “More Details” and instead use text which describes the location of the link. Screen readers can scan pages for links, so more description is desired. In addition, a larger target link is helpful for mobility impaired users having difficulty with a mouse.

Lists

List items are typically run together on a screen reader. An ordered list should be used for lists for especially long elements.

Abbreviations

Use periods for abbreviations read as separate letters (e.g. P.S.U.); otherwise a screen reader may read it as a single word (e.g. “Sue”).

Floating Menus

Floating menus can be problematic for both screen readers and for users with mobility impairments. Make sure a text-based menu is also available.
Configuring and Using Dreamweaver Accessibility Tools

Turn on Accessibility Checkers

Dreamweaver has a variety of accessibility checkers that can be used to build valid code during development. This will shorten the testing process considerably when used appropriately.

To turn on the options:

1. Open the Dreamweaver application.
2. Go to **Edit** then **Preferences** (Windows/Mac System 9) or the **Dreamweaver** menu then **Preferences** (Macintosh OSX).

<table>
<thead>
<tr>
<th>Category</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Show attributes when inserting:</td>
</tr>
<tr>
<td>Accessibility</td>
<td>☑ Form objects</td>
</tr>
<tr>
<td>Code Coloring</td>
<td>☑ Frames</td>
</tr>
<tr>
<td>Code Format</td>
<td>☑ Media</td>
</tr>
<tr>
<td>Code Hints</td>
<td>☑ Images</td>
</tr>
<tr>
<td>Code Rewriting</td>
<td>☑ Offscreen Rendering (need to disable when using screen readers)</td>
</tr>
<tr>
<td>CSS Styles</td>
<td></td>
</tr>
<tr>
<td>File Types / Editors</td>
<td></td>
</tr>
<tr>
<td>Fonts</td>
<td></td>
</tr>
<tr>
<td>Highlighting</td>
<td></td>
</tr>
<tr>
<td>Invisible Elements</td>
<td></td>
</tr>
<tr>
<td>Layers</td>
<td></td>
</tr>
<tr>
<td>Layout Mode</td>
<td></td>
</tr>
<tr>
<td>New Document</td>
<td></td>
</tr>
<tr>
<td>Office Copy/Paste</td>
<td></td>
</tr>
<tr>
<td>Panels</td>
<td></td>
</tr>
<tr>
<td>Preview in Browser</td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td></td>
</tr>
<tr>
<td>Status Bar</td>
<td></td>
</tr>
<tr>
<td>Validator</td>
<td></td>
</tr>
</tbody>
</table>

3. Make sure the options for **Show Attributes when Inserting** are checked for each type of HTML object.
4. Click **OK** to close the window.

Display HTML View

Although Dreamweaver automates many processes, it is always a good precaution to have the HTML code open in order to check the code.

To open the Dreamweaver document in split pane view.

1. Go tool bar on top of the document then click the split pane icon in the upper left. The button has two angle brackets on top and a document on the bottom.
Dreamweaver document in split pane view.

2. The window will show the Code and Design view with the HTML code on top and the page on the bottom.

3. Click the double angle bracket button to view the code only. Click the document icon to view the layout only.

Insert an Image

In this exercise, you will insert an image so that you will be prompted to fill in the ALT tag.

To insert the image

1. Go to the Insert menu then Image (Insert >> Image).
2. Browse to the image file you wish to insert (e.g. “psulogo.gif”). Highlight the image then click Choose.
3. You will see a pop-up window asking for Alternative Text. Fill in a short description for the function of the image (e.g. “Penn State University”).

4. Click OK. The image will be inserted with an ALT tag. See the example code below.

```html
<img src="psulogo.gif" alt="Penn State University" width="163" height="70">
```
Tips for ALT Tags

When deciding on which text to put into a ALT tag, imagine that you have to read the Web site over the phone. Do all images need an extended description or a short summary do? Can some decorative images be ignored? Do you need to describe the image or where it links to? Here are some general guidelines to follow:

a. If an image is a link, describe the link destination, not the image.
b. If the image is used for decoration or to adjust a layout, then you can use an empty ALT tag (alt= ""). The image is irrelevant to the content so does not need to be read aloud.
c. If the image is described extensively in the text, then the ALT tag should just identify the image, but not give details (e.g. alt="screen capture-read below")
d. If the image is especially complex but no description is included, then create an HTML file with the description and include a “View Extended Text Description” link.
   Note: This is similar to a “D-link.” However not all screen reader users understand the convention of clicking on “D” to view a text description.

What’s “Long Description”?

One of the options listed in the pop-up was an option to put in a link to a “long description” HTML file. This is meant to insert a LONGDESC tag which provides a link to a file which contains a longer description for a detailed image. However, not all screen readers support this option yet, so a “View Extended Text Description” is probably safer.

Editing an Alt Tag

If you need to edit an ALT tag, then do the following.

1. Make sure the Properties window is open (Window >> Properties).
2. Click on the image, then move your cursor to the Alt text box in the Window (on the right). Click and edit as needed.
   Note: If you do not see the Alt text box, then make sure the image is selected.

Creating a Tooltip

If you want to create a tool tip which shows text when a mouse rolls over the image, then include a TITLE attribute. Although the ALT tag acts as a tool tip in some browsers, it is not universally implemented in all visual browsers. See the example code below.

```html
<img src="psulogo.gif" alt="Penn State University" title="Founded in 1855" width="163" height="70">
```
Create an Image Map

In this exercise, you will insert an image and create several clickable “hot-spots” on which to make links.

1. Insert an image (Insert >> Image) such as “ANGELlogo.jpg”). Enter a description of the links menu as the Alternative text. This is what the screen reader will use to describe the block of links.

2. Make sure the image is selected and go to the Properties Window.

3. If the Properties Window only has two lines, click the down arrow at the lower-right to reveal the options for creating an image map.

4. Fill in a Map name in the textbox. It should be descriptive, but it is not as critical as the ALT tag.

5. Select one of the shape icons such as the rectangle, then highlight an area that will be designated as a hot spot.

6. Release the mouse then return to the Properties window and fill in the URL for the Link text box and a description of the link location in the Alt text box.

7. To create additional hotspots, make sure the image is still highlighted, select the shape icon and create a second hotspot.
For the ANGEL Course Management System logo image, the following hot spots were used.

<table>
<thead>
<tr>
<th>Image</th>
<th>Alt Text</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSU Logo</td>
<td>Penn State Homepage</td>
<td><a href="http://www.psu.edu">http://www.psu.edu</a></td>
</tr>
<tr>
<td>University</td>
<td>2nd Homepage Link</td>
<td><a href="http://www.psu.edu">http://www.psu.edu</a></td>
</tr>
<tr>
<td>LIAS</td>
<td>Libraries LIAS Catalog</td>
<td><a href="http://www.lias.psu.edu">http://www.lias.psu.edu</a></td>
</tr>
<tr>
<td>Directories</td>
<td>Penn State Directories</td>
<td><a href="http://www.psu.edu/ph">http://www.psu.edu/ph</a></td>
</tr>
<tr>
<td>Registrar</td>
<td>University Registrar</td>
<td><a href="http://www.psu.edu/registrar">http://www.psu.edu/registrar</a></td>
</tr>
<tr>
<td>Search</td>
<td>Search Penn State Web</td>
<td><a href="http://search.psu.edu">http://search.psu.edu</a></td>
</tr>
</tbody>
</table>

Appearance of the Code

The HTML code for the sample image map described above would look something like this:

```html
<img src="ANGELHeader.jpg" alt="Selected Penn State Links" width="586" height="72" border="0" usemap="#PSULinks">

<map name="PSULinks">
  <area shape="rect" coords="0,0,121,72" href="http://www.psu.edu" alt="Penn State Home">
  <area shape="rect" coords="249,56,314,72" href="http://www.psu.edu" alt="2nd Penn State Home Link">
  <area shape="rect" coords="324,56,361,72" href="http://www.lias.psu.edu" alt="LIAS">
  <area shape="rect" coords="374,56,448,72" href="http://www.psu.edu/ph" alt="Penn State Directories">
  <area shape="rect" coords="462,56,524,72" href="http://www.psu.edu/registrar" alt="University Registrar">
  <area shape="rect" coords="539,56,583,72" href="http://search.psu.edu" alt="Search Penn State Web">
</map>
```

Create a Data Table

Data Tables vs. Layout Tables

In terms of accessibility, it is important to distinguish a table used to present data in a grid, versus using HTML tables to divide a screen into different regions for page design purposes.

If you use a layout table, then it is important to make sure it can be “linearized” correctly, that is the content is coherent when cells are read left to right, top to bottom. Avoid using tables to create special positioning tricks as they may be read in the incorrect order. See an example of a problematic layout table below.
Problematic Layout Table

A problematic layout table with text going from the lower left to the upper right. Users will see it as “3-2-1 Ignition”, but screen readers will hear “Ignition 1-2-3.” In image with an ALT tag would be a better Option.

Insert a Blank Data Table

Below is a sample data table that can be used for practice.

A List of Colors with Web Hexadecimal Numbers, Spanish Translation and Welsh Translation

<table>
<thead>
<tr>
<th>Color Name</th>
<th>Web Color Code</th>
<th>Spanish Name</th>
<th>Welsh Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>#FF0000</td>
<td>rojo</td>
<td>coch</td>
</tr>
<tr>
<td>orange</td>
<td>#FF9900</td>
<td>anorojado</td>
<td>oraens</td>
</tr>
<tr>
<td>yellow</td>
<td>#FFFF00</td>
<td>amarillo</td>
<td>melyn</td>
</tr>
<tr>
<td>green</td>
<td>#00FF00</td>
<td>verde</td>
<td>gwyrrdd</td>
</tr>
<tr>
<td>blue</td>
<td>#0000FF</td>
<td>azul</td>
<td>glas</td>
</tr>
<tr>
<td>purple</td>
<td>#9900FF</td>
<td>violeta</td>
<td>porffor</td>
</tr>
<tr>
<td>black</td>
<td>#000000</td>
<td>negro</td>
<td>du</td>
</tr>
<tr>
<td>white</td>
<td>#FFFFFF</td>
<td>blanco</td>
<td>gwyn</td>
</tr>
<tr>
<td>gray</td>
<td>#999999</td>
<td>gris</td>
<td>llwyd</td>
</tr>
<tr>
<td>brown</td>
<td>#990000</td>
<td>moreno</td>
<td>llwyd (also)</td>
</tr>
</tbody>
</table>

To insert the table, do the following:

1. Go to Insert >> Table. Fill in the number of row and columns and other formatting as desired.
2. A pop-up window will ask for various accessibility tags.
3. For the Caption tag, you can insert a title for the table which will also be visible in browsers. Select top or bottom alignment in the drop-down menu below.
4. For the **Summary** tag, you can fill in any summary information which will help users interpret information (e.g. “Sales have been increasing over the past five years.”). This information will only be read by screen readers.

5. For the **Header** drop-down menu, select whether the descriptions of the data will be in rows, columns of both. Most data tables have **Tops** or **Rows** for headers. Some item must be designated a header for accessibility purposes.

6. Click **OK**.

7. To turn any TD cell into a TH, highlight the cell, go to the Properties window and check the Header Option.

8. You will have to hand-code the SCOPE attribute. The choices are `scope="row"` or `scope="col"`. For instance a column header should be coded as `<th scope="col">…</th>`.

A table will be inserted. Any cells identified as “headers” (TH cells) will be formatted bold and centered by default.

**Appearance of the Code**

Here is some sample code for the data table shown above:

```html
<table border="1" cellpadding="3">
  <caption>A List of Colors with Web Hexadecimal Numbers, Spanish Translation and Welsh Translation</caption>
  <tr>
    <th scope="col">Color Name</th>
    <th scope="col">Web Color Code</th>
    <th scope="col">Spanish Name</th>
    <th scope="col">Welsh Name</th>
  </tr>
  <tr>
    <td scope="row">red</td>
    <td>#FF0000</td>
    <td lang="es">rojo</td>
    <td lang="cy">coch</td>
  </tr>
  <tr>
    <td scope="row">green</td>
    <td>#00FF00</td>
    <td lang="es">verde</td>
    <td lang="cy">cyf</td>
  </tr>
  <tr>
    <td scope="row">blue</td>
    <td>#0000FF</td>
    <td lang="es">azul</td>
    <td lang="cy">dal</td>
  </tr>
</table>
```

**Note on Lang Tags**

Some experts recommend including a LANG attribute every time you switch languages. Some screen readers such as *HomePage Reader* can recognize the LANG tag and switch to some of the major languages, but most do not.

In addition, few screen readers support languages like Swahili, Arabic or Chinese. For these languages, it is more important that the content be encoded correctly. See [http://tlt.its.psu.edu/suggestions/international](http://tlt.its.psu.edu/suggestions/international) for more details.
Supported Languages in HomePage Reader Version 3

- British English Code: en-GB
- Spanish Code: es
- French Code: fr
- German Code: de
- Italian Code: it
- Portuguese (Brazilian) Code: pt

Note: Users must activate the LANG tag recognition mode in HomePage Reader.

Insert Accessible Form Objects

To create an accessible form, do the following:

1. Go Insert >> Form to create a blank form.
2. Move your cursor to the form boundaries, then go to Insert >> Form Objects, then select an option such as a Text Field.
3. Fill in a Label which identifies what the user should input, choose an alignment option, then click OK.

4. The LABEL text will be visible in the browser and can be formatted or styled as needed. Screen readers use the LABEL tag to connect fields with their labels for easier parsing.

Appearance of the Code

Depending on which Style of Label you select, the LABEL tags can be coded as followed.

Wrap with Label Tag

\[<\text{label}>\text{First Name}<\text{input type="text" name="personalname"}></\text{label}>\]

Attach Label Tag Using ‘for’ Attribute

\[<\text{label for="lastname"}>\text{Last Name}</\text{label}>\]

\[\ldots\]

\[<\text{input type="text" name="lastname-field" id="lastname"}>\]
Note: This option is can be used when the label and the form object are separated in the code such as in a table.

**Tips for Laying out Accessible Forms**

a. If you need to indicate required fields, use a symbol such as an asterisk instead of changing the text format. A key stating “* = Required Fields” is also useful.

b. If you use layout tables for forms, make sure the label and form object are either in the same TR or in the same TD. For some layouts, it may be possible to insert a BR to conserve space in a horizontally laid out table.

c. You may need labels for certain Submit buttons, but you can use style sheets to hide the text from visual browsers. Using colors is better then visibility: hidden which also hides elements from screen readers.

**Create Frames**

Screen readers coming to a Frames site will see a menu of frames to view.

If your site needs to have frames, then make sure each frame has a meaningful title referring to the frame’s function (e.g. Main Menu or Content), not to the position on the page. Also, avoid titling pages or frames with random database numbers.

To specify frames titles:

1. Go to Insert >> Frames or Insert >> HTML >> Frames depending on the version of Dreamweaver MX.
   
2. In the accessibility pop-up window, choose each Frame from the drop-down menu, then give it a descriptive Title. Click OK to finish.

3. A properly encoded frame will look like:
   
   `<frame src="menu.html" name="leftFrame" title="Main Menu">`

**Accessible Document Structure**

Many accessibility experts stress the importance of using headers to designate sections of a Web page and stylesheets for accessibility.

The reason for the emphasis on using H1, H2 and P tags is that screen readers are able enter modes in which only headers are read or paragraphs are read one at a time. Similarly, screen readers have a mode in which links are scanned, so descriptive link text is more useful than repeated generic links.
Switching Between Header Types

You can mark any paragraph and turn it into a header by highlighting it then going to the Properties window and selecting one of the Header options. You can also use the following keyboard shortcuts.

<table>
<thead>
<tr>
<th>Tag</th>
<th>Win/Mac</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Control+1/Command+1</td>
</tr>
<tr>
<td>H2</td>
<td>Control+2/Command+2</td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>Control+6/Command+6</td>
</tr>
<tr>
<td>P</td>
<td>Shift+Control+P/Shoft+Command+P</td>
</tr>
<tr>
<td>None</td>
<td>Control+0/Command+0</td>
</tr>
</tbody>
</table>

Importing or Copying Text

If you import text from another source, even with line breaks preserved, it may be formatted not a series of P’s but a long text with BR BR tags inserted. Text with all BR BR tags instead of P tags are not as accessible because users no longer have the option of reading content P by P.
Testing for Accessibility

Generally speaking, it is best to perform several tests for accessibility. No tool can capture all aspects of accessibility needs, so a variety of tests are needed.

Testing in Text-Only Mode

Ideally, all pages should be tested on a screen reader, but designer may not always have access to a screen reader. An alternative is to test the page on a text-only browser, such as the freeware program Lynx, which shows only text and reveals whether the relevant TITLE and ALT tags are present. Some options are listed below.

The Delorie Lynx Emulator

The Delorie Lynx Emulator is a Web service which simulates the appearance of Web pages seen through Lynx.

To use the service, go to http://www.delorie.com/web/lynxview.html, then type the Web address for the site you wish to test.

Downloading and Installing Lynx

Lynx is an open source application much as in the Linux model. There are lots of sources for downloading Lynx, but some "installs" require more effort to set up than others. Below are some links to some recommended installs

  This is one of the easier versions to install.

- Macintosh OSX (adapted Unix installs)
  GNU O.S.X Archives – http://www.osxgnu.org/

  Once installed, you must go to Applications >> Utilities >> Terminal, then type "usr/bin/local/lynx" (note all the slashes) to open Lynx.

Other Lynx Installs:

- List from Kenneth K. Wok
  http://pachome1.pacific.net.sg/~kennethkwok/lynx/download.html

- Lynx Open Source Project –
  http://lynx.browser.org/

Downloading Demo Screen readers

Downloads of freeware or demo screen readers are listed at http://www.rene4u.com/scr-e.htm
Location of Screen Readers at Penn State

Screen readers are located within the Libraries.

Testing in Zoom Mode

This test involves the use of several browsers.

1. If you are on Windows, open Internet Explorer. Open a page, then go to View >> Text Size >> Largest. If the text does not appear to change size, then the coders have specified absolute font sizes and disabled zooming.
   Note: Internet Explorer for Macintosh does allow more zooming than the Windows version does.

2. To test or demo very large zooms, use Netscape 6+, Mozilla or Opera which allow for custom zooms.
   Netscape/Mozilla
   Go to View >> Text Size >> Other and select “1000%”.
   Opera
   Click on the magnify drop-down menu to the right of the URL address bar and type or choose "1000%".

Color Blindness Simulators

Use these simulators to test color combinations for different types of color blindness. The goal here is legibility, not necessarily universal aesthetic appeal.

- Wickline Color Filter – http://colorfilter.wickline.org
  Lets you toggle between different forms of color blindness once you designate a Web address.

  Test color schemes with almost all forms of color blindness

  Allows you to test images and live Web pages for red-green and blue yellow color deficiencies.

  Generates basic color schemes and shows them in different color blindness filters below color blocks.

Disabling Stylesheets

If you use stylesheets, use one of these tools to make sure your site is legible without stylesheets.

1. If you test with Opera, you can toggle between Author Mode (with stylesheets) and User Mode (no stylesheets). Click the document/paper icon next to the Web Address to go into User Mode. Click again to return to author mode.
   Note: Opera is available in a free version with ads and full price ad-free for-fee version.
2. The following Web services display Web sites without an attached style sheet.

LIFT: Using a Verification Report

This section will focus on LIFT as an example of how an accessibility report works. LIFT is also available at a departmental discount from the Penn State Computer Store. LIFT is also installed in the CLC Student Computing Labs, so it is a tool to readily accessible to students.

Activating LIFT in the University Park Student Computing Labs

Windows - To activate LIFT for Dreamweaver in the labs:
1. Make sure Dreamweaver is closed.
2. Go to the Start menu, then navigate to All Programs >> Web Development >> LIFT >> LIFT Install.
3. Close the new browser window and open Dreamweaver.
4. You will see a new category called LIFT NNg in the top menu for Dreamweaver.

Macintosh - LIFT is already preinstalled in the Mac labs. Open Dreamweaver and look for the LIFT NNg menu on top.

Running a Section 508 Report

1. In Dreamweaver, go to LIFT NNg >> Evaluate.
2. In the Page(s) drop-down menu, you can select options for Current Document, Entire Local Site, or folders.
   Note: Because of the amount of processing speed needed, it is often better to go page by page, then do the entire site at once.
3. In the Guidelines drop down menu, you can select the report you wish to run. The default is Section 508.
4. Click Run to execute the report.

Other Guidelines reports available include Table Tests, Image Tests and NNg Beyond Alt Text (usability and miscellaneous issues).

Interpreting a Section 508 Report

The report is sorted by how severe the problem. Problems marked with X in the left and Priority 1 or Priority 2 in the right are the most serious errors.

Errors marked as ? in the left are items which must be manually checked. LIFT and other reports cannot check for:
   • appropriate color schemes or color coding
• whether the ALT and TITLE tags are accurate and meaningful
• presence of text transcripts for audio
• correct implementation of stylesheets

The goal of running a LIFT report is to be aware of any possible accessibility issues and make sure the necessary options are available. *A perfect report is not the goal.*

**Running an ALT Tag Report**

This report comes with Dreamweaver and list images missing an ALT tag.

1. Go to Sites >> Reports
2. Check the Missing Alt Text report.
   Note: There is an Accessibility report available, but it only checks for WCAG compliance, not Section 508.
3. Select “Current Document” or “Entire Current Local Site” from the Report On drop-down menu on top, then click Run. The report with line numbers appears in a separate window.

**Cynthia Says Web Service**

Cynthia Says ([http://cynthia.contentquality.com](http://cynthia.contentquality.com)) is a reporting service similar to LIFT. Like LIFT, you need to select the Section 508 option before running the report.

**WebAIM Wave Web Service**

The WAVE accessibility report ([http://www.wave.webaim.org/index.jsp/](http://www.wave.webaim.org/index.jsp/)) visually highlights both the headings of documents and the ALT tags through a series of color-coded icons. Although difficult to interpret at first, it does allow developers to view the overall structure of the tags, which can be valuable.
Additional Resources

Penn State

http://tlt.its.psu.edu/suggestions/accessibility/
http://www.equity.psu.edu/access_psu/

Guidelines

http://usability.gov/web_508/tutorial.html
http://www.section508.gov/index.cfm?FuseAction=Content&ID=12
http://www.w3.org/WAI/ (WCAG Guidelines)

Accessibility Tutorials

http://www.webaim.org/techniques/
http://www.jimthatcher.com/
http://www.trainingcafe.com/macromedia/accessibility/
http://www.drc.org.uk/newsroom/website6.asp (Demos)
http://www.accessify.com/tutorials/default.asp (Advanced Topics)
http://www.unc.edu/webaccess/guidelines.html
http://www.otal.umd.edu/uupractice/

Accessibility Checkers

LIFT Documentation - http://www.equity.psu.edu/access_psu/lift.asp
Cynthia Says - http://cynthia.contentquality.com/
ART - http://69.10.136.193:8080/applications/testing/simulations
Visicheck (Color) - http://www.vischeck.com/vischeck/vischeckURL.php