

Web Accessibility: A Good Start

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Universality of the Web

- From its inception, the World Wide Web was meant to be inclusive of *everyone*.
- **“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.”**
Tim Berners-Lee, inventor of the World Wide Web
- Unfortunately, unless Web pages are created with accessibility in mind, it is **not** universal.

Different Methods of Web Access

- Students with various kinds of disabilities do not access the Internet the same way as non-disabled users do. For example:
 - Users who are blind can't see the pages, so they use screen reader software which reads Web pages aloud to them.
 - Users who are deaf or hard-of-hearing can't hear information presented via sound, so they need transcripts for audio files and captions for video clips in order to have access to the same content as hearing folks have.

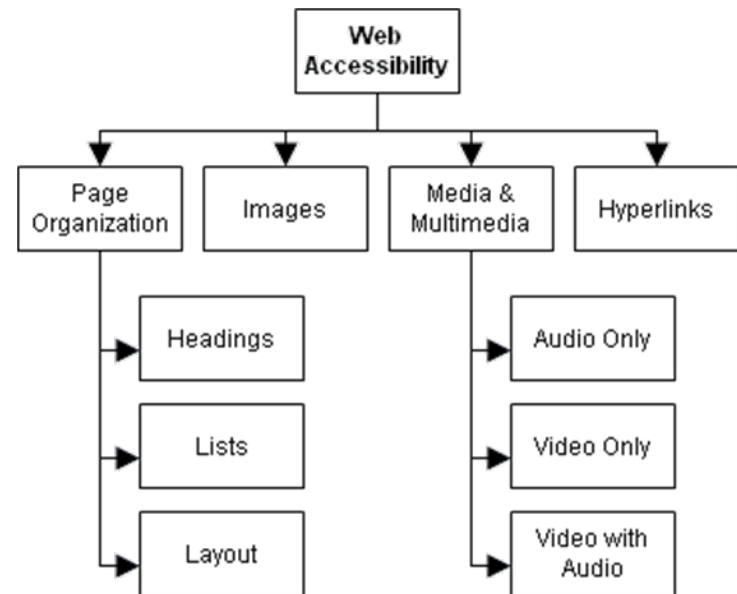
Today's Focus, p. 1

- We'll cover some specific ways to make your Web pages more accessible.
 - Though we certainly don't cover *every* accessibility issue here, addressing these key issues will certainly get you moving in the right direction.
- **BONUS:** A more accessible page is almost always a more usable page for *all* users, not just those with disabilities.

Today's Focus, p. 2

Learn how Web accessibility relates to:

- Page organization (headings, lists, and layout);
- Images;
- Media and multimedia (audio only, video only, and video with sound); and
- Hyperlinks.



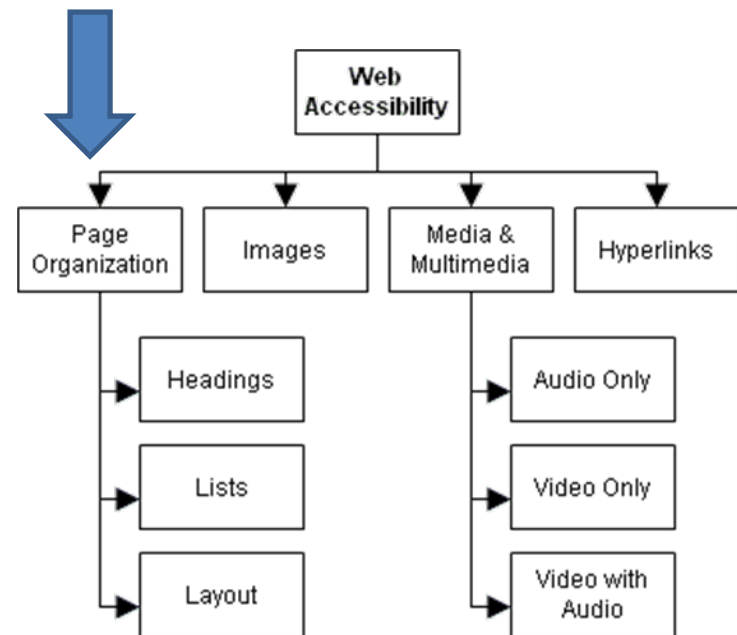
HTML Basics

- HTML = HyperText Markup Language
 - The language of the Web
 - The code you see when you view a Web page's source
- `<p>` = paragraph
`<p>Web accessibility is critical.</p>`
- `<h1>` = most important (and largest) heading
 - Typically used for a Web page's title
- `<h2>` = second-level heading
 - Used to denote major headings within a Web page
- `` = image
``

Page Organization

Page organization topics include:

1. Headings
2. Lists
3. Consistency in page layout



Headings, p. 1

Which is easier (and more inviting) to read?

Most people today can hardly conceive of life without the internet. It provides access to news, email, shopping, and entertainment, at any hour of the day or night. Some have argued that no other single invention has been more revolutionary since Gutenberg's printing press in the 1400s. Now, at the click of a mouse, the world can be "at your fingertips"—that is, if you can use a mouse—and see the screen... and hear the audio—in other words, if you don't have a disability of any kind.

This introduction should help you understand how people with disabilities use the web, the frustrations they feel when they cannot access the web, and what you can do to make your sites more accessible.

The internet is one of the best things that ever happened to people with disabilities. You may not have thought about it that way, but all you have to do is think back to the days before the internet to see why this is so. For example, before the internet, how did blind people read newspapers? They mostly didn't. Audiotapes or Braille printouts were expensive—a Braille version of the Sunday New York Times would be too bulky to be practical. At best, they could ask a family member or friend to read the newspaper to them. This method works, but it makes blind people dependent upon others.

Most newspapers now publish their content online in a format that has the potential to be read by "screen readers" used by the blind. These software programs read electronic text out loud so that blind people can use computers and access any text content through the computer. Suddenly, blind people don't have to rely on other people to read the newspaper to them. They don't have to wait for expensive audio tapes or expensive, bulky Braille printouts. They simply open a web browser and listen as their screen reader reads the newspaper to them, and they do it when they want to and as soon as the content is published.

Despite the web's great potential for people with disabilities, this potential is still largely unrealized. For example, some sites can only be navigated using a mouse, and only a very small percentage of video or multimedia content has been captioned for the Deaf. What if the internet content is only accessible by using a mouse? What do people do if they can't use a mouse? And what if web developers use graphics instead of text? If screen readers can only read text, how would they read the graphics to people who are blind?

As soon as you start asking these types of questions, you begin to see that there are a few potential glitches in the accessibility of the internet to people with disabilities. The internet has the potential to revolutionize disability access to information, but if we're not careful, we can place obstacles along the way that destroy that potential and which leave people with disabilities just as discouraged and dependent upon others as before.

Though estimates vary, most studies find that about one fifth (20%) of the population has some kind of disability. Not all of these people have disabilities that make it difficult for them to access the internet, but it is still a significant portion of the population. Businesses would be unwise to purposely exclude 20, 10, or even 5 percent of their potential customers from their web sites. For schools, universities, and government entities it would not only be unwise, but in many cases, it would also break the law.

Each of the major categories of disabilities requires certain types of adaptations in the design of the web content. Most of the time, these adaptations benefit nearly everyone, not just people with disabilities. Almost everyone benefits from helpful illustrations, properly-organized content and clear navigation. Similarly, while captions are a necessity for Deaf users, they can be helpful to others, including anyone who views a video without audio.

Introduction to Web Accessibility

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This introduction should help you understand how people with disabilities use the web, the frustrations they feel when they cannot access the web, and what you can do to make your sites more accessible.

The Web Offers Unprecedented Opportunities

The internet is one of the best things that ever happened to people with disabilities. You may not have thought about it that way, but all you have to do is think back to the days before the internet to see why this is so. For example, before the internet, how did blind people read newspapers? They mostly didn't. Audiotapes or Braille printouts were expensive—a Braille version of the Sunday New York Times would be too bulky to be practical. At best, they could ask a family member or friend to read the newspaper to them. This method works, but it makes blind people dependent upon others.

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Falling Short of the Web's Potential

Despite the web's great potential for people with disabilities, this potential is still largely unrealized. For example, some sites can only be navigated using a mouse, and only a very small percentage of video or multimedia content has been captioned for the Deaf. What if the internet content is only accessible by using a mouse? What do people do if they can't use a mouse? And what if web developers use graphics instead of text? If screen readers can only read text, how would they read the graphics to people who are blind?

As soon as you start asking these types of questions, you begin to see that there are a few potential glitches in the accessibility of the internet to people with disabilities. The internet has the potential to revolutionize disability access to information, but if we're not careful, we can place obstacles along the way that destroy that potential and which leave people with disabilities just as discouraged and dependent upon others as before.

Headings, p. 2

- Use headings to organize content.
 - `<h1>` for page title
 - `<h2>` for main headings
 - `<h3>` for subheadings within main sections
- Don't "fake" headings with larger, bolder text
- Don't use h1-h6 just to achieve larger, bolder text

How Headings Help Screen Reader Users

- Blind or visually-impaired users of screen readers can press the H key to navigate from heading to heading
- The screen reader will read the level of the heading (level 1, level 2, etc.) and then read the text of the heading.
- In this way, screen reader users can get an overview of the page's structure just as sighted users can by glancing at headings.

Lists, p. 1

Which is easier (and more inviting) to read?

- Densely-worded paragraphs (see Example 1)
 - Paragraphs interspersed with numbered or bulleted lists as appropriate to the content (see Example 2)
- *Example 1:*
Expert learners have three key characteristics. They actively engage with the material to be learned. They take responsibility for their own learning. They consistently practice self-regulated learning.
 - *Example 2:*
Expert learners have three key characteristics. They:
 - Actively engage with the material to be learned.
 - Take responsibility for their own learning.
 - Consistently practice self-regulated learning.

Lists, p. 2

- Use **lists** liberally within your Web content.
 - Lists help break up long sections of paragraph text.
 - Lists are much easier to read than are long paragraphs of text.
 - Lists add white space to the page (giving rest to tired eyes).
- Ordered (numbered) lists are easier to follow for blind users who are hearing them rather than reading them.
 - Give preference to numbered lists over bulleted lists wherever it makes sense to do so.
 - Bulleted lists are fine for items that do not have to be in any particular order.

Consistent Layout

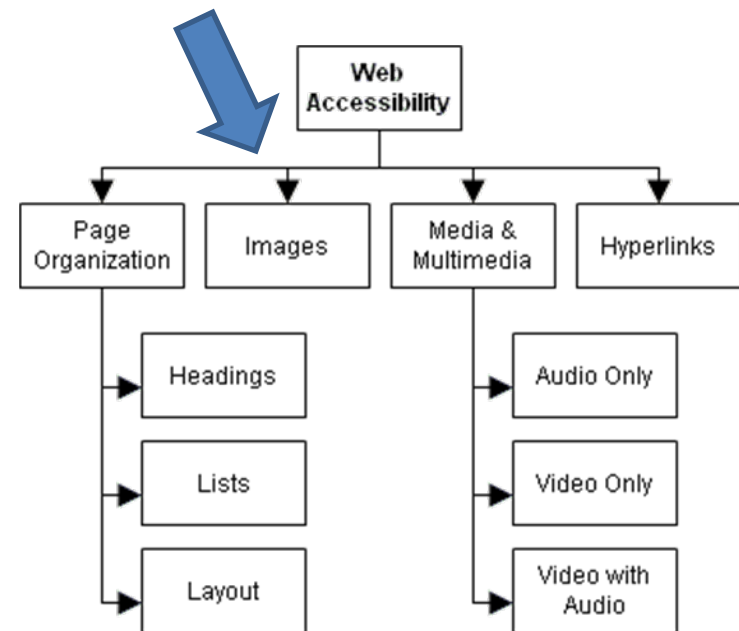
Keep page layouts consistent from page to page, including:

- Page titles
- Navigation bars
- Contact links
- Other page elements

Images, p. 1

Image topics include:

- Simple images
- Complex images
- Decorative images
- Hyperlinked images



Images, p. 2

- Images are unusable by those who are blind or severely visually-impaired.
- We “fix” that by providing text descriptions of the images for those who cannot see them.
- How you provide the text description depends upon the image’s *purpose* and its *complexity*.
- Most frequently, this involves giving the image alternative text “alt text,” a short description of the image. But that’s not always enough.

Images, p. 3

Case 1: Image is used to illustrate a simple concept.

- *Example:* A chemistry Web page contains a photo of lab equipment.
- *Accessibility solution:* Give the photo alternative text (“alt text”), such as “test tubes, beakers, and bottles of chemicals.” HTML code:

```

```

Images, p. 4

Case 2: Image is complex and conveys a lot of information.

- *Example:* A page contains a bar chart giving sales statistics for three different companies.
- *Accessibility solution:*
 - Give the image brief alt text, such as “sales increases for ABC, XYZ, and QRS companies.”
 - Include a full description of the information provided via the image in the text that appears near the image, e.g., “As the chart shows, ABC enjoyed the highest sales increase at 20%. QRS was second at 15%, while XYZ sales increased by only 8%.”

Images, p. 5

Case 3: Image is purely decorative, i.e., it adds no information to the page.

- *Example:* A page contains a photo of a flower just to “prettify” the page, not to convey any information about the flower.
- *Accessibility solution:* Give the image null (empty) alt text. HTML code:

```

```

Images, p. 6

Case 4: Image is hyperlinked. Alt text should tell user what will happen if image is clicked.

- *Example:* A small image of a house is used to hyperlink to a site's home page.
- *Accessibility solution:* It is not useful to give the image alt text such as "small blue house"; instead, the alt text should read "Home."

Images, p. 7

How Do You Give an Image Alt Text?

- Whether within a course management system or not, this depends upon the editor being used.
- Typically, once you click the icon to insert an image, an Image Properties dialog box appears.
- Look for a text field that is named “alt text,” “alternative text,” “brief description,” etc. and enter your alt text there.
 - This text field may be “hidden” in a different tab (e.g., “advanced”) within the Image Properties dialog box.

Images, p. 8

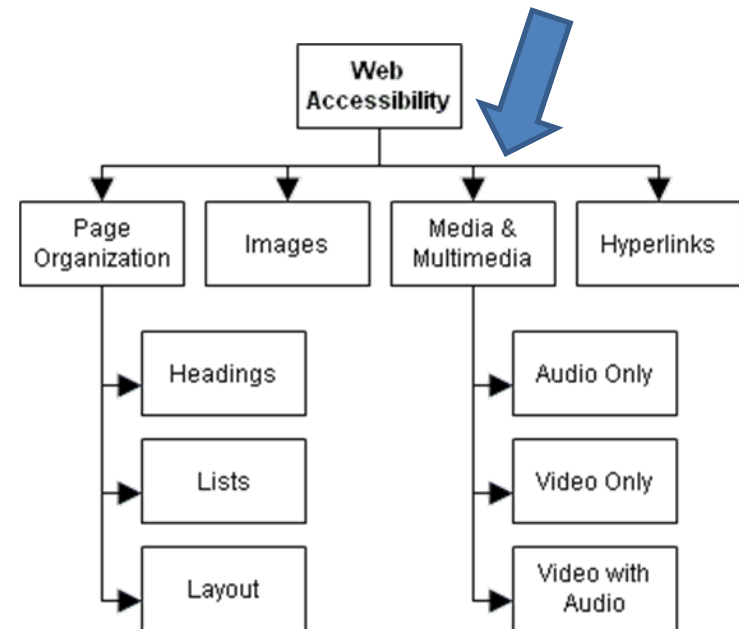
How Is Alt Text Used by Screen Reader Users?

- The alt text is read aloud by the screen reader.
 - Those who cannot see the image can still receive the pertinent information conveyed by the image
- The alt text is not displayed on the page, except (in some browsers) when the mouse hovers over it.

Media and Multimedia

Media and multimedia topics include:

1. Audio files
2. Video files with no audio
3. Video files with audio



Audio Files

- Audio files are unusable by students who are deaf or severely hard-of-hearing.
- Every audio file must be accompanied by a text transcription.
- Wherever you link to an audio file, include the link to the transcript right next to or under it, e.g.:
[Midterm review \(audio file\)](#), [midterm review \(transcript\)](#)

Video Files (No Audio)

- Video files without audio (e.g., a video demonstrating a particular skill) are unusable for students who are blind or severely visually-impaired.
- The video must be accompanied by a text description of the important actions within the video.
 - The best way to do this is to include the description right next to or under the link to the video.

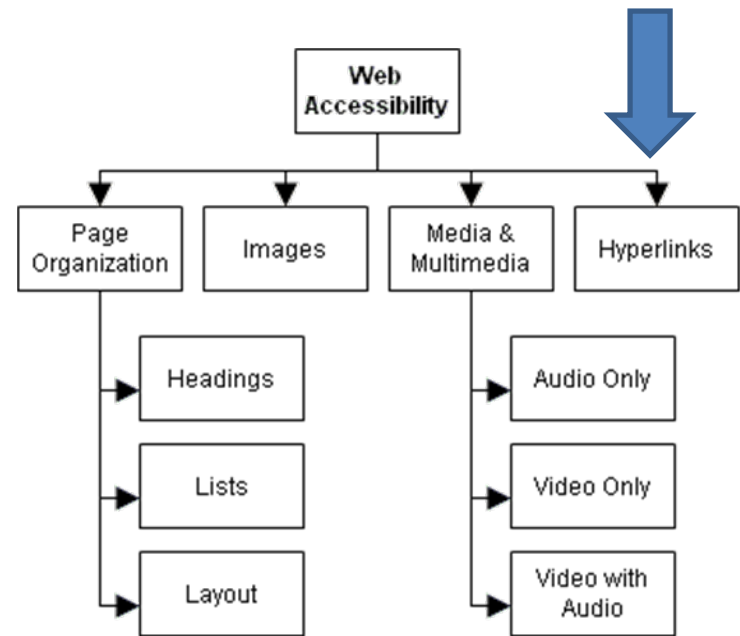
Video Files (with Audio)

- Video files with sound must be *synchronously* captioned, meaning that captions of the spoken words should display at the same time that the words in the video are spoken.
 - It is *not* enough to provide just a transcript, though it's best to do that as well.
 - The caption information must contain not only a transcription of the spoken words, but also of any other significant sounds.
- Transcripts should include both spoken words and a narrative of the significant video events.

Hyperlinks, p. 1

Hyperlink topics include:

- Text hyperlinks
- Image hyperlinks



Hyperlinks, p. 2

Text Hyperlinks

- Make the hyperlinked text *short* and *meaningful*, i.e., it should tell users where the link will take them. Never use "click here" or "more" as your hyperlinked text.
 - *Bad example:* [Click here](#) for more info about registration.
 - *Good example:* For more info, see the [Registration](#) page.

Hyperlinks, p. 3

Text Hyperlinks (continued)

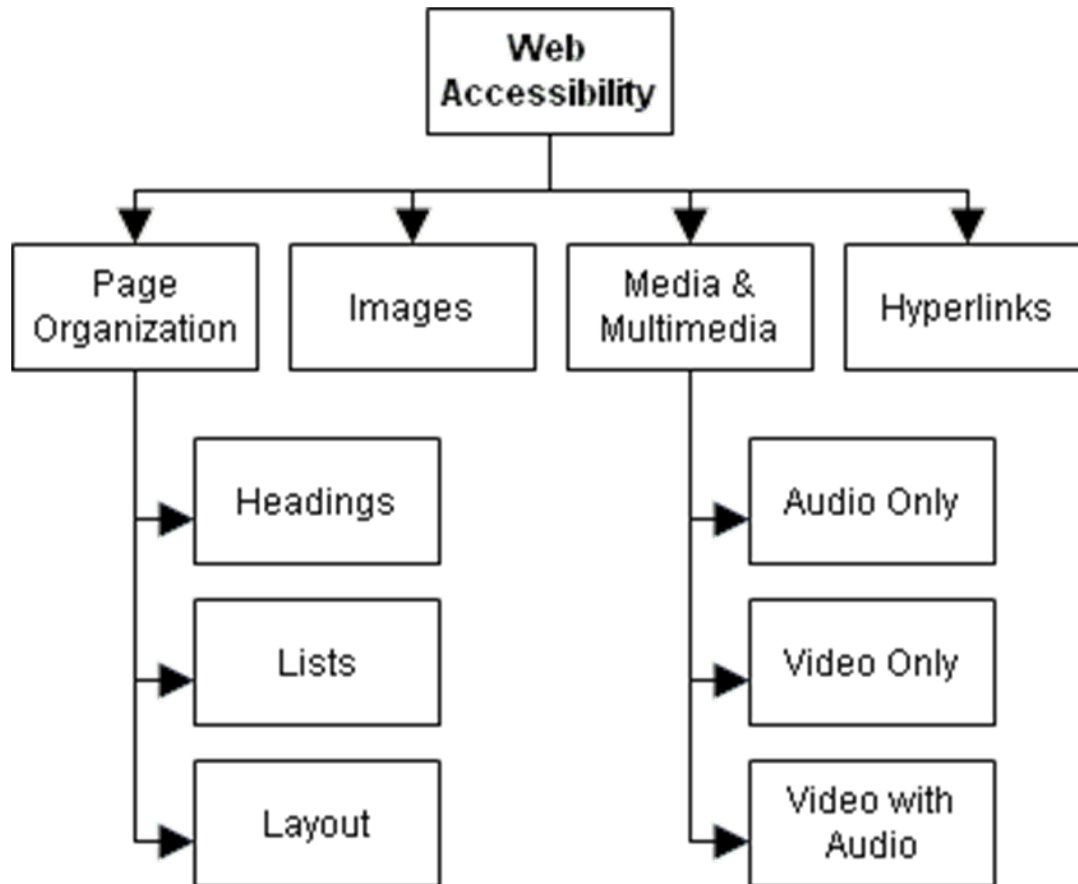
- Avoid using URLs or e-mail addresses as your hyperlinked text. Instead, use *meaningful hyperlinked text*; you may include the URL or e-mail address in parentheses after the hyperlinked text.
 - *Bad example:*
Visit <http://coastline.edu/page.cfm?LinkID=420>.
 - *Good example:*
[Visit Special Programs & Services for the Disabled](#).
 - *Bad example:* Contact jdoe@coastline.edu.
 - *Good example:* Contact [John Doe](#) (jdoe@coastline.edu).

Hyperlinks, p. 4

Image Hyperlinks

- When an image is used as a link, its alternative text should specify what will happen when the link is clicked (e.g., "Home"), not describe the image (e.g., "red house with blue roof").
- If the image is a button containing text, such as a button that reads "Learning Resources" or "Site Map," the alt text should say exactly what the button text says.

Summary, p. 1



Summary, p. 2

Web Accessibility Issues	Challenges	Solutions
Page Organization—Headings	Web pages that don't use appropriate headings make it difficult for screen reader users to navigate or understand the page structure.	<ul style="list-style-type: none">• Use h1 through h6 headings hierarchically to help structure the page.• Never use headings just to format text as bolder or bigger.
Page Organization—Lists	Lists of items presented in paragraph format are harder to read for users with cognitive impairments and more difficult to track for screen reader users.	<ul style="list-style-type: none">• Use lists liberally.• Give preference to numbered lists when appropriate.
Page Organization—Layout	Users are confused when key page elements move from page to page.	<ul style="list-style-type: none">• Be consistent in page layout of navigation and other page elements.

Summary, p. 3

Web Accessibility Issues	Challenges	Solutions
Images	Images are unusable for those who cannot see them.	<ul style="list-style-type: none">• Every image should have appropriate alt text.• The image's purpose on the page (informational, decorative, or hyperlink) dictates what type of alt text is required.

Summary, p. 4

Web Accessibility Issues	Challenges	Solutions
Media—Audio Files	Audio files by themselves are completely unusable for those who are deaf or severely hard-of-hearing.	<ul style="list-style-type: none">• Provide a text transcript of the audio file.• Place the link to the transcript right next to the link to the audio file.
Media—Video with No Sound	Videos with no sound are completely unusable by individuals who are blind or severely visually impaired.	<ul style="list-style-type: none">• Provide a text description of the action or contents of the video.• Place the link to the description right next to the link to the video file.
Multimedia—Video with Sound	Individuals who are deaf or hard-of-hearing cannot benefit from the sound portion of a multimedia file; therefore, much of the meaning is lost.	<ul style="list-style-type: none">• Videos should be synchronously captioned.• Place a link to the transcript right next to the link to the video file.

Summary, p. 5

Web Accessibility Issues	Challenges	Solutions
Text Hyperlinks	Hyperlinked text that does not make sense out of context (e.g., "click here") or does not describe the link destination effectively (e.g., a URL instead of a description of what will be found at that URL) creates significant accessibility issues for screen reader users.	<ul style="list-style-type: none">• Make hyperlinked text short and meaningful, i.e., make sure it clearly conveys the destination of the hyperlink.
Image Hyperlinks	Individuals who are blind or severely visually impaired cannot see icons or text presented within an image.	<ul style="list-style-type: none">• Make sure the alt text for hyperlinked images communicates the destination of the link rather than describes the visual appearance of the image.

Web Accessibility: A Good Start

- Contact Info:
Jan Heck
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- Wonderful resource:
 - WebAIM (Web Accessibility in Mind):
webaim.org/
- Thank you for caring about accessibility!