

HCI and Design

Today

Web Accessibility

Web Accessibility

- **Web accessibility** refers to the practice of removing barriers that prevent interaction with, or access to, websites by people with disabilities so that all users have equal access to information and functionality.
- Web content is extremely visual, so people with vision impairments are particularly affected
 - Web developers need to especially pay attention to needs of visually-impaired people, e.g., blind, low-vision, color blind, etc.

Why make things accessible?

Good for business

- Reach a large audience

Support social inclusion

- Participation from a diverse group is good

Follow the law

- Access to information is a basic human right

Legal support for accessibility

1990: Americans with Disabilities Act (ADA)

1998: Rehabilitation Act (section 508)

2006: Individuals with Disabilities Education Act (IDEA)

<http://webaim.org/articles/laws/usa/>

Legal Cases

1996 ADA complaint vs. City of San Jose, CA

- Use of PDF inaccessible to city commissioner
- Web sites are a “service” and thus subject to the ADA
- Led to *S. J. Web Page Disability Access Standard*

1999 National Federation of the Blind vs. AOL

- Based on the interpretation of the Web as a place of public accommodation (ADA)
- Settled out of court
- 2000: AOL agreed to make its browser accessible

2006 National Federation of the Blind vs. Target

- ADA as applied to Target’s web site
- Settled for US \$6 million

Accessibility features / technologies improve experience and quality of life

Enables a person to function at his or her own pace.

Fosters independent living.

Maintains or improves daily function

Reduces stress-related injuries

Aids integration into society (levels the “playing field”)

Modifies the environment instead of the person

Accessibility features / technologies can be simple or complex

A magnifying glass

A straw

Anti-glare screen for the monitor

Door handles instead of door knobs

Calculators/clocks with large digits



Alternative keyboards

Braille and refreshable braille

Scanning software

Screen magnifiers

Screen readers

Speech recognition

Speech synthesis

Tabbing through structural elements

Text browsers / Voice browsers

Visual notification

Web accessibility for blind or visually-impaired people

Need non-visual access to screens



Speech / Screen reader



Refreshable Braille Display

Web accessibility for deaf or hard of hearing people

Need visual access to content



Sign language



Captioning

Web accessibility for people with mobility impairments



Web accessibility for people with cognitive impairments

Memory
Attention
Literacy
Learning
and more...

**This Is an
example of
the Open Dyslexic
Typeface**

Web Accessibility Principles

Make things:

Perceivable

Operable

Understandable

Robust

Web Content Accessibility Guidelines

Perceivable

- Provide text alternatives for non-text content and provide captions and alternatives for audio and video content.
- Make content adaptable; and make it available to assistive technologies.
- Use sufficient contrast to make things easy to see and hear.

Operable

- Help users find content and make everything keyboard accessible.
- Give users enough time to read and use content.
- Do not use content that causes seizures.

Web Content Accessibility Guidelines

Understandable

- Make text and content understandable, and readable
- Make content operate in predictable ways and help users avoid and correct mistakes.
- Follow and use standards

Robust

- Maximize compatibility with current and future technologies.
- Doesn't break every time there is an OS update
- Works across a variety of services and platforms

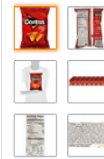
Practical Tips / Guidelines

Provide appropriate alternative text

Use the <alt> attribute to describe the function of any image or animation.

More info.

Doritos Tortilla Chips, Nacho Cheese, 1.75-Ounce Large Single Serve Bags (Pack of 64) Doritos
★★★★★ 175 customer reviews | 9 answered questions



```
main-image-click="{}">
▼<div id="imgTagWrapperId" class="imgTagWrapper" style="height:
500px;">
  <img alt="Doritos Tortilla Chips, Nacho Cheese, 1.75-Ounce
Large Single Serve Bags (Pack of 64)" src="https://images-
na.ssl-images-amazon.com/images/I/
71Br1LeeJGL. SY679SX.,,0,0,486,679 PIBundle-
64-TopRight-0-0 SX486 SY679 CR-0-0-486-679 SH20 .img" data-
```


Accessibility Tips / Guidelines

Provide appropriate document structure

- Helps understandability
- Helps for cognitive impairments
- Helps for keyboard navigation / shortcuts

Info on [Page organization](#). Use [headings](#), [lists](#), and consistent structure. Use [CSS](#) for layout and style.

[Allow users to skip repetitive elements on the page](#)

Provide headers for data tables

Helps screen reader users to navigate and understand the data table

Accessibility Tips / Guidelines

Ensure links make sense out of context

Use text that makes sense when read out of context. For example, avoid "click here" or "more"

More guidelines for [Hypertext links](#).



Ensure users can complete and submit all forms

Every form element (text field, checkbox, etc.) has a label
Use the `<label>` element.

Make sure the user can [submit the form and recover from any errors](#) (e.g., failure to fill in all required fields).

- Name field is required.
- E-mail address field is required.

Accessibility Tips / Guidelines

Caption and/or provide transcripts for media

Guidelines for captioning and transcripts of audio, and descriptions of video.

Scripts, applets, & plug-ins. Provide alternative content in case active features are inaccessible or unsupported.

Ensure accessibility of non-HTML content, including PDF files, Microsoft Word documents, PowerPoint presentations and Adobe Flash content.



*Download And Install
Adobe Flash Player*

Accessibility Tips / Guidelines

Do not rely on color alone to convey meaning!

Design to standards

HTML compliant and accessible pages are more robust and provide better search engine optimization.

CSS allows you to separate content from presentation.

More flexibility and accessibility of your content.

Verifying accessibility

Testing with real users is the best way to validate

Build in accessibility as part of the design
(NOT as an afterthought)

Check your work. Validate.

Online materials can help:

<http://www.w3.org/TR/WCAG>

<http://webaim.org/intro/#principles>

<http://webaim.org/standards/wcag/checklist>

Summary

Web accessibility refers to the practice of removing barriers that prevent interaction with, or access to, websites by people with disabilities so that all users have equal access to information and functionality.

There are well established guidelines and checklists for how to make your designs and systems accessible.

Follow and use these guidelines in your design process!

Do NOT sacrifice accessibility for aesthetic!

Activity: Web Accessibility

Pick any INTERESTING website. Your choice.... Be creative!

How accessible is your chosen website?

Use the list of tips/guidelines in the slides to evaluate the accessibility of the page.

(You can use “View Source” on the page to examine some of the HTML and see how well it implements accessibility features.)

Make a list of:

1. Principles followed (i.e., good accessibility)
2. Principles NOT followed (i.e., bad accessibility)
3. Your suggestions for improvement.

Upload your response to: <https://drive.google.com/drive/folders/1rVoovm6FzpddPlcx2NWzOWxrkfFZkubw?usp=sharing>