

A Brain-Friendly Guide

Head First Web Design

**A Learner's Companion
to Accessible, Usable,
Engaging Websites**



Learn how
drawing pictures
produces better
websites.



Give your users
what they really want
from your website.



Prevent the
pernicious Foo
Bar from ripping
off your designs.



Master the
triadic and tetradic
color schemes.



Use accessibility to
get your message
out to millions.

O'REILLY®

Ethan Watrall & Jeff Siarto

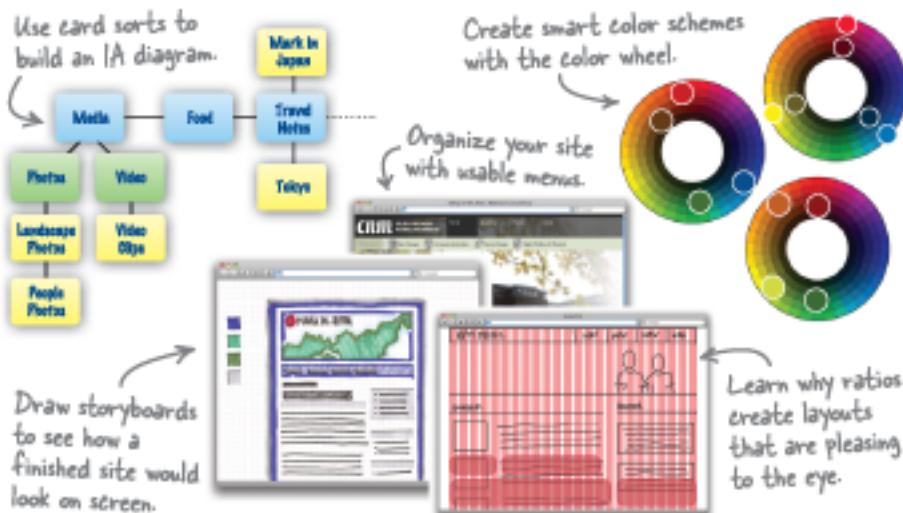
Head First Web Design

Web Design

What will you learn from this book?

Ever wished you could learn real web design from a book? Wondering how to make your pages look beautiful, communicate your message effectively, and get your site approved by the accessibility and usability police, all at the same time?

Head First Web Design is your ticket to mastering all of these topics. You'll learn the secrets of designing incredible, user-friendly sites, from customer requirements to hand-drawn storyboards all the way to finished HTML and CSS online masterpieces... and your sites will actually work, too!



Why does this book look so different?

We think your time is too valuable to spend struggling with new concepts. Using the latest research in cognitive science and learning theory to craft a multi-sensory learning experience, *Head First Web Design* uses a visually rich format designed for the way your brain works, not a text-heavy approach that puts you to sleep.

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“Simplified, but far from dumbed-down. Practical and intuitive. I wish I had access to a book like this when I was getting started.”

— Matt DiGangi,
Real life web designer

“Finally a developer can fully understand the whole process of creating a GREAT website. Web Design 101, you finally got the book you needed/wanted.”

— Johannes de Jong,
Web Programmer

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Head First Web Design

by Ethan Watrall and Jeff Siarto

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Series Creators:

Kathy Sierra, Bert Bates

Series Editor:

Brett D. McLaughlin

Editors:

Brett D. McLaughlin, Louise Barr

Design Editor:

Louise Barr

Cover Designers:

Louise Barr, Steve Fehrer

Production Editor:

Brittany Smith

Indexer:

Julie Hawks

Page Viewers:

Taylor and Sam

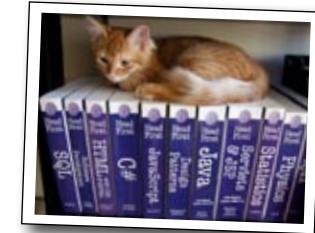
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Ethan's
daughter, Taylor



Jeff's Parents



Ethan's son, Sam

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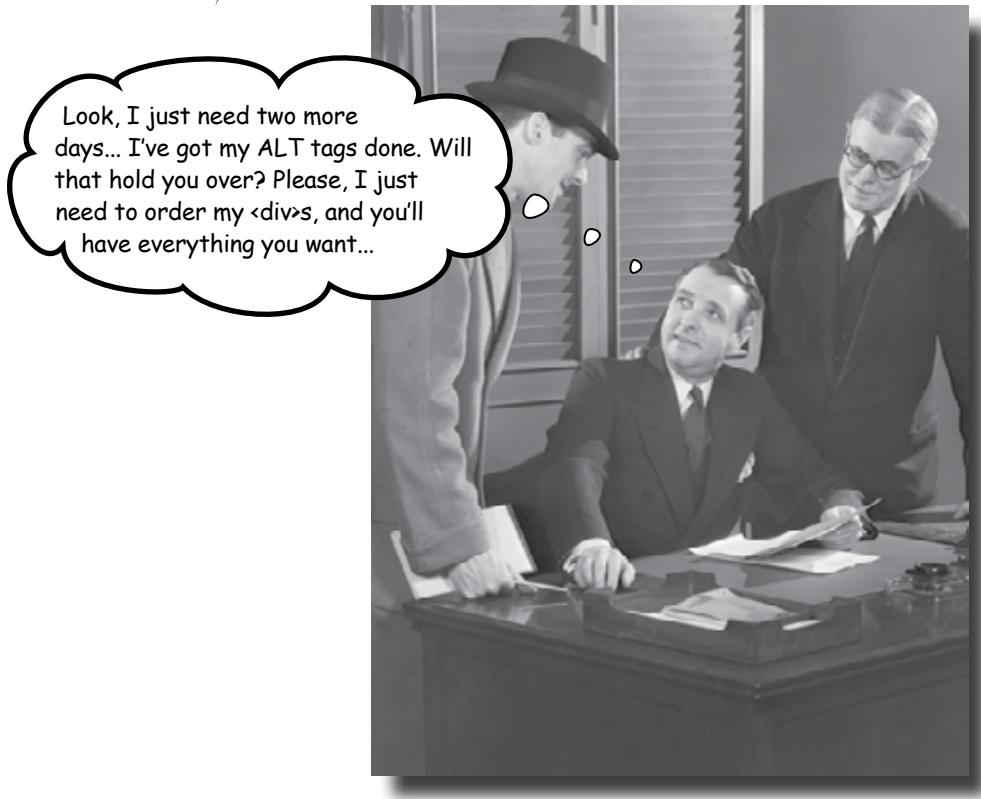
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8 accessibility



Inaccessibility Kills



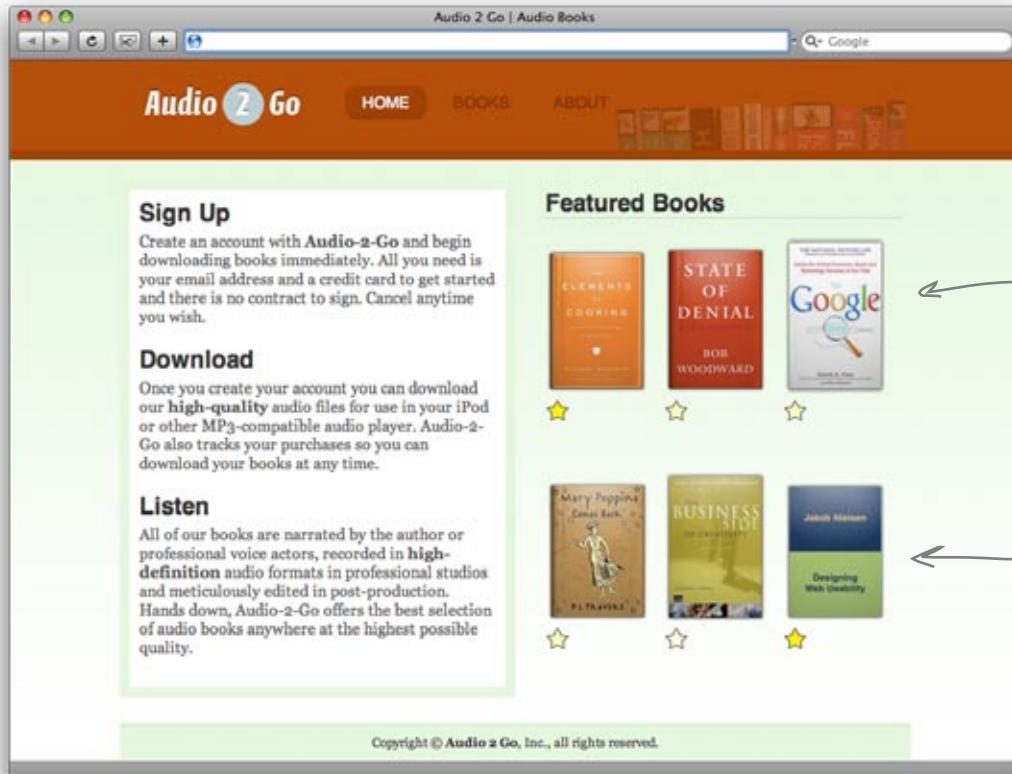
Who's missing out on experiencing your website, right now?

You may have a beautiful, well-laid out, easily navigable site... but that doesn't mean everyone's enjoying it. Whether it's someone who's visually-impaired, or just a user who has trouble distinguishing blues from greens, your site must be **accessible**. Otherwise, you're losing users and hurting your business. But don't worry: **accessibility isn't difficult!** By **planning the order of your markup**, using **ALT** attributes and **LONGDESC** tags, and **thinking about color**, you'll widen your audience immediately. Along the way, you may even get **WCAG certified**. What's that? Turn the page, and find out...

Audio-2-Go: inaccessible accessibility

Audio-2-Go is a site that sells audio books for the blind and visually impaired. But the owner's got a problem: his site doesn't work for those who can't see! It turns out that the firm who did his site didn't know anything about accessibility, and now he's losing customers faster than you can say, "But I can't *see* what your site looks like!"

It's up to you to take Audio-2-Go to its audience: those who depend on accessibility every day.



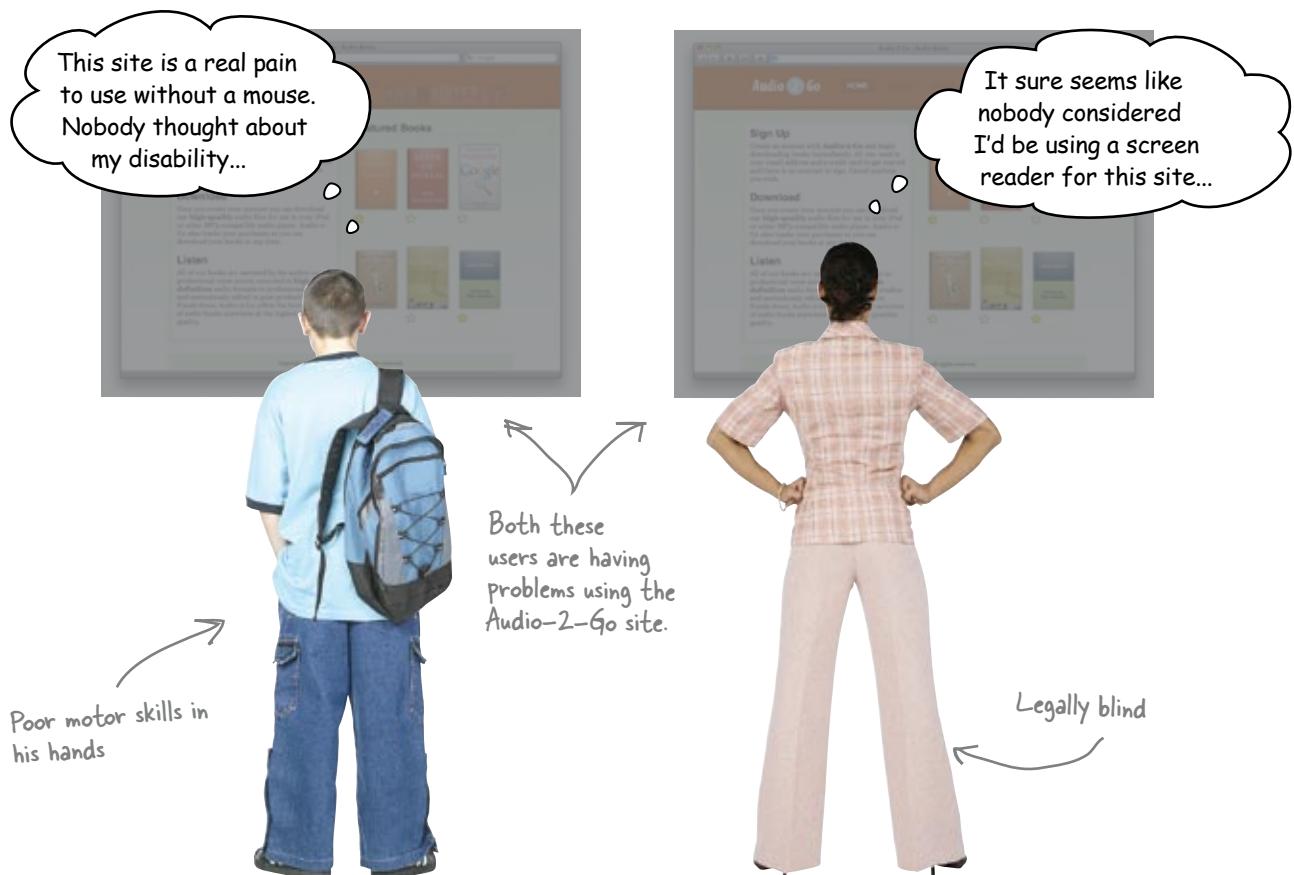
Do you see this site in full color, at high-resolution? Then you're probably not in Audio-2-Go's core audience!

Accessibility means making your site work for EVERYONE

So, what exactly is accessibility? When a website can't be used by someone with a disability, the site's inaccessible. When your site can be used by someone with a disability, then your site is **accessible**.

So, basically, accessibility is both the process and the techniques used to create a site that can be used by someone with a disability. Web accessibility usually deals with visual, auditory, physical, speech, cognitive, and neurological disabilities. And, on the Web, accessibility also includes designing for older individuals whose abilities are changing due to age.

Accessibility is thinking about how DISABILITIES affect how people experience and enjoy YOUR website.

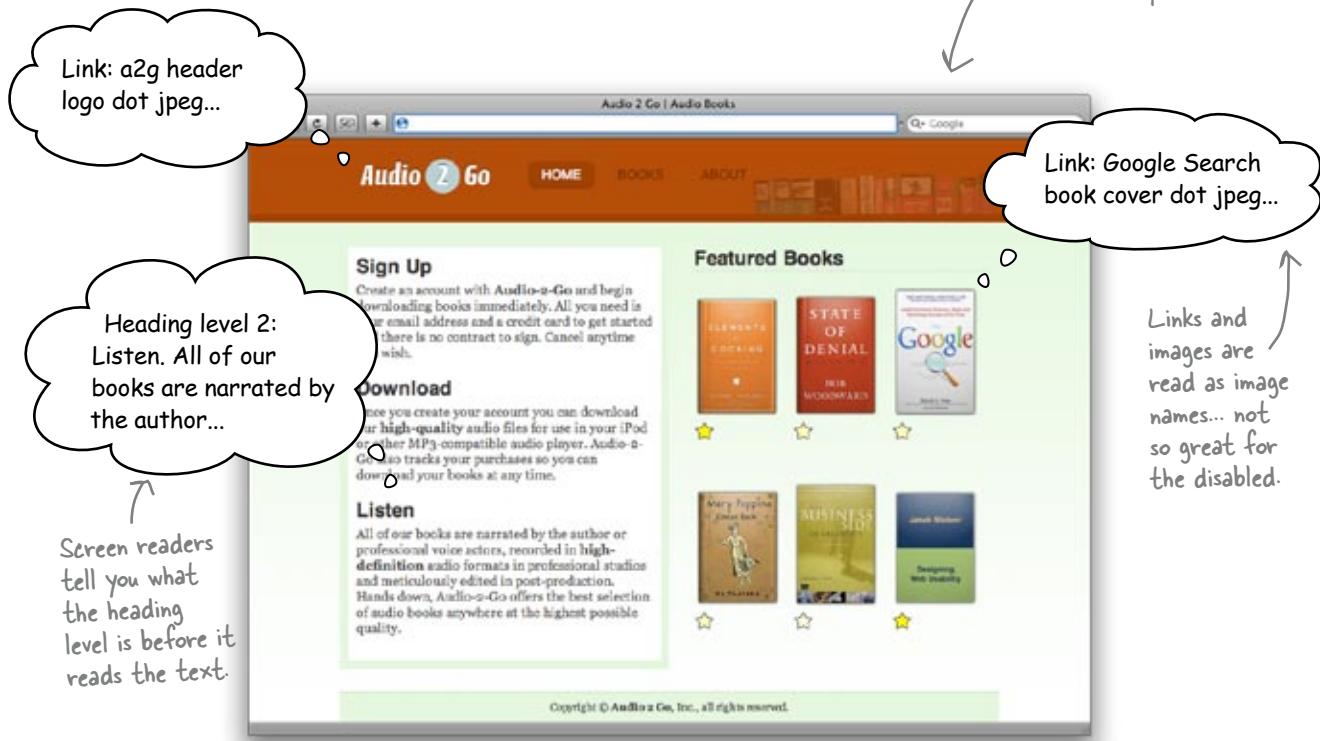


How does your site READ?

When you think about disabilities, one of the first things you probably think about is the visually impaired or the blind. Those disabilities have a huge effect on how your site is perceived. All your visuals become more or less irrelevant... in how they *look*, but not in how they *sound*.

The majority of people who are blind use a **screen reader** to browse the web. A screen reader is a piece of software that reads the text of a website out loud. While there are quite a few screen readers on the market, the most popular is JAWS (<http://www.freedomscientific.com/jaws-hq.asp>), a Windows-only product. Mac users often use VoiceOver, a screen reader built right into the Mac OS X operating system (<http://www.apple.com/macosx/features/voiceover/>).

Regardless of the product, a screen reader literally reads your page out loud:





Sharpen your pencil

You can't begin to understand accessibility until you experience a website as someone who is blind or visually impaired does. Open up JAWS (they've got a great free demo) if you are on a Windows machine, or VoiceOver if you are on a Mac, and turn your screen reader loose on your favorite website. Oh... and before you start the reader, **make sure you close your eyes**.

Now that you've got a bit of an idea about how the blind and visually impaired experience the web, it's time to see how Audio-2-Go's website measures up. Open up your screen reader and turn it loose on the Audio-2-Go website (<http://www.headfirstlabs.com/books/hfwd/audio2go/>). Write down three things you learned about the site, and then what you think the overall site is about... based just on what you heard from the screen reader.

What is Audio-2-Go about?

1

.....

2

.....

3

.....

What are your thoughts about the overall site?



.....

.....

.....

A site's message should be clear...to EVERYONE

Audio-2-Go's message isn't so clear verbally, is it? The whole point of a website is to communicate something to your audience. That means your job is to make sure your content is just as clear to someone using a screen reader as it is to a sighted user. But when you "listen" to Audio-2-Go, a lot's lost in translation.

Here's what a few visually impaired users thought about the Audio-2-Go site:

The screenshot shows the Audio-2-Go website with several thought bubbles overlaid, representing user feedback:

- Top right thought bubble:** "My reader started listing what sounded like image names, or maybe filenames. Aren't there any books on this site?"
- Left thought bubble:** "I had no idea where I was. I never even heard the name of the page... just some text and a bunch of weird sounding names."
- Bottom right thought bubble:** "Without your help, a screen reader will read image names, which is pretty confusing."
- Bottom left thought bubble:** "Titles, headings, and descriptions are vital for screen readers."
- Bottom center thought bubble:** "The order of your markup matters a LOT to screen readers... and can have a big effect on confusing visually impaired visitors."

Face it: computers are stupid!

If you want to get a handle on screen readers, and accessibility in general, you have to accept that **computers are stupid!** A computer, or a piece of software, can't figure out that your image really represents a book, and that humans want to know the title of that book. So even though your page displays a book, and an image that looks like a book, that's not what a computer sees.

A human can look at a picture and describe what they see in clear descriptive terms.

Awww... It's a cute orange kitten with big eyes.



DCS1243.jpg...

Without any other information, all a computer sees is a filename and an extension.



BRAIN BARBELL

How can you tell the computer what your image really is, in a way you think a screen reader might understand?

A computer will read your image's ALT text

So, what happens when a screen reader comes upon an image? Most of the time it simply reads the file name...which is absolutely no good to someone who is blind or visually impaired. Fortunately, `img` element's have an attribute that lets you provide your own description: the `alt` attribute. If a screen reader sees an image with an `alt` attribute, the reader reads the value of the `alt` attribute *instead of* the image name. Perfect, right?

Well, only if your `alt` text is any good.

Fortunately, good alt text is pretty easy to create. You want a short, descriptive, clear phrase. In other words, just succinctly describe the image:





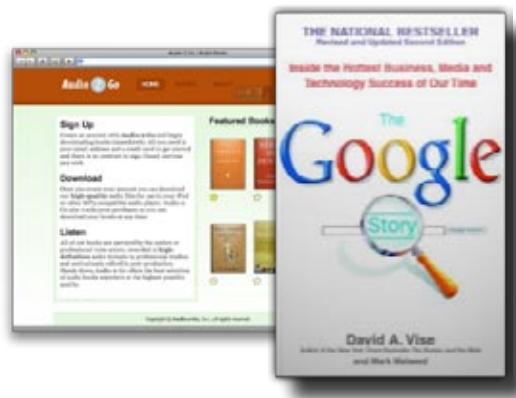
Create an `` tag based on the information for each image and the alt text that was provided by the owner.



Filename: audio2go-logo.jpg

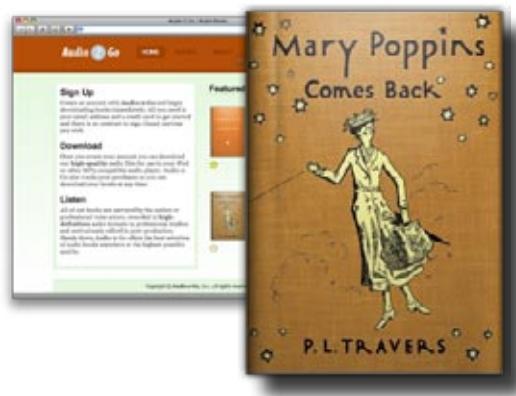
Description: Audio-2-Go header logo

Write in the full `` tag here



Filename: googlestory.jpg

Description: The Google Story: An inside look into one of the World's greatest technology startups.



Filename: poppins.jpg

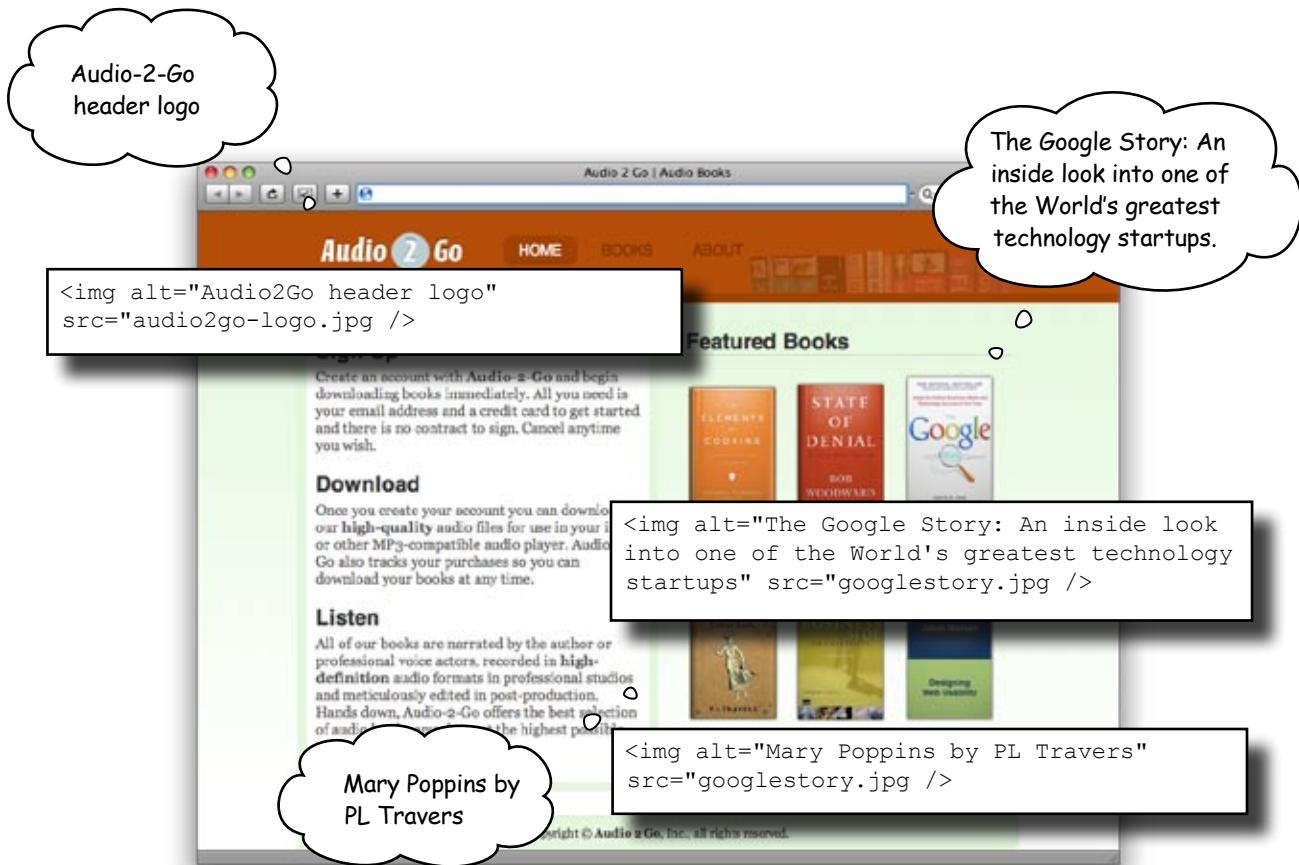
Description: Mary Poppins by P.L. Travers

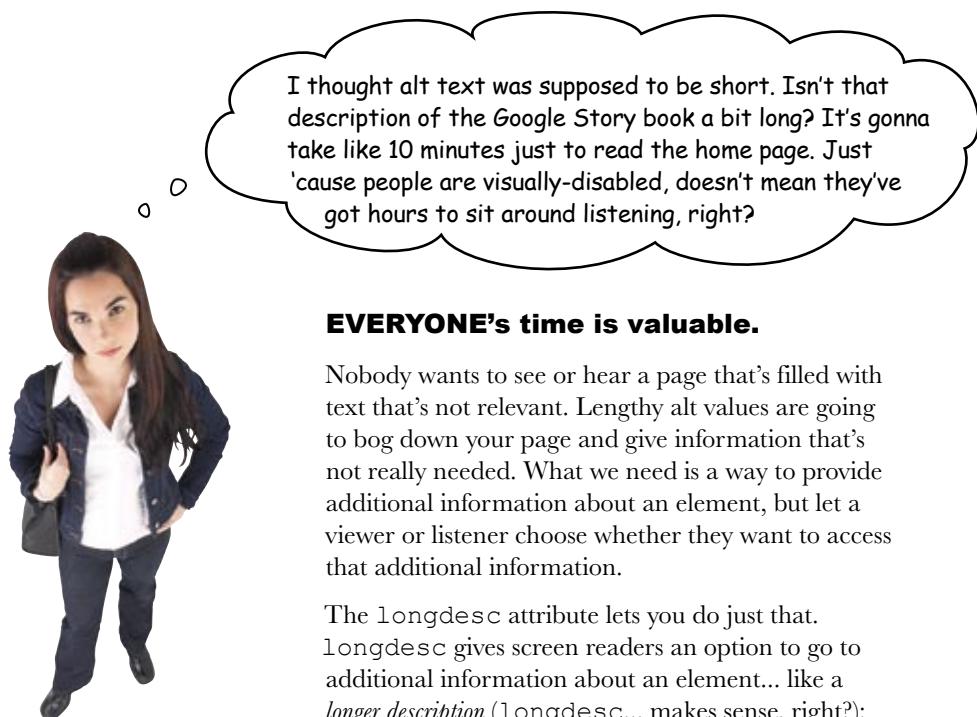


Test Drive

Try out the Audio 2 Go site with a screen reader

Download the code for the Audio 2 Go site from the Head First Labs website. Open up index.html in your text editor and add the ALT tags from the last page. Then, fire up your screen reader and check out the Audio-2-Go site again. Any better?





EVERYONE's time is valuable.

Nobody wants to see or hear a page that's filled with text that's not relevant. Lengthy alt values are going to bog down your page and give information that's not really needed. What we need is a way to provide additional information about an element, but let a viewer or listener choose whether they want to access that additional information.

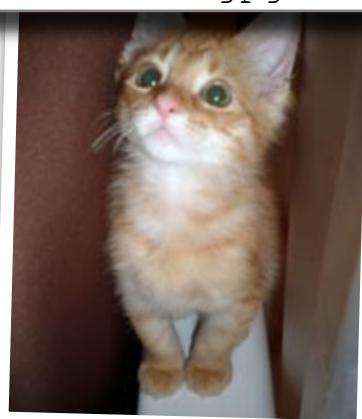
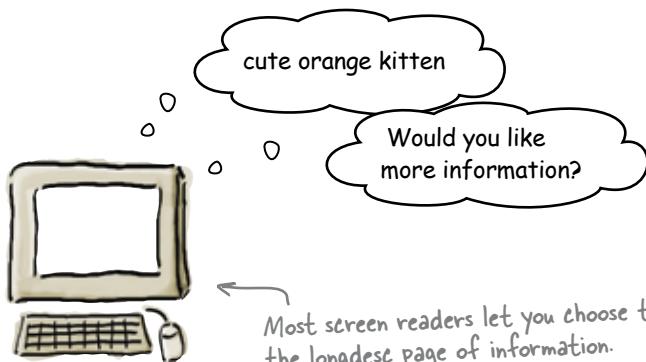
The `longdesc` attribute lets you do just that. `longdesc` gives screen readers an option to go to additional information about an element... like a *longer description* (`longdesc`... makes sense, right?):

A short alt text gives a concise description of an image.

```

```

`longdesc` indicates a page that has more detail... lots of cloying details about that cute orange kitten are available, but only if a user wants that information.



Most screen readers let you choose to hear the `longdesc` page of information.

Convert your long ALT text to a LONGDESC

Let's convert the too-long alt text for the Google book to a longdesc... complete with a separate XHTML page. Here's what you should do:

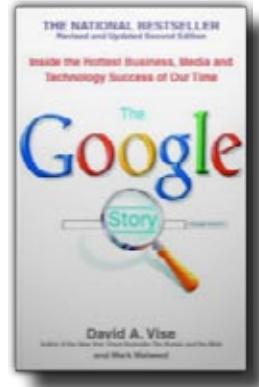
1 Add a LONGDESC attribute to the Google book image tag.

Now the alt text is short and to the point.

```

```

longdesc is added and points to a page with more information.



2 Create an HTML file called googlestory.html and add a longer description.

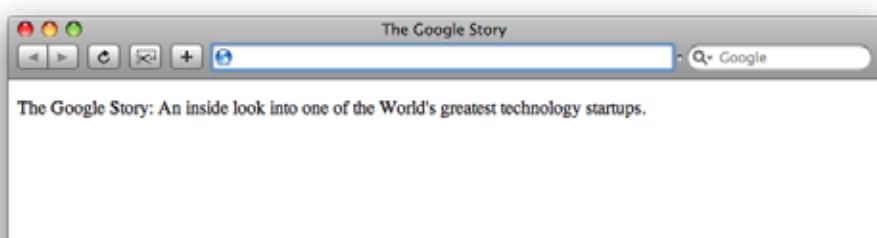
The file you reference in longdesc should be normal XHTML.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"  
      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml"  
      xml:lang="en" lang="en">  
  <head>  
    <title>The Google Story</title>  
    <meta http-equiv="Content-Type"  
          content="text/html; charset=utf-8"/>  
  </head>  
  <body>  
    <p>The Google Story: An inside look into one of the  
       World's greatest technology startups.</p>  
  </body>  
</html>
```

Add your long description between the paragraph tags. You could even add more content from the book's back cover if you wanted to.

Make sure you properly mark up your content. Remember, this is still an HTML file... Let's keep things valid!

A longdesc page looks pretty bland... but these are meant to be read more than seen.





Test Drive

Give Audio-2-Go another screen-reading try

Add the `longdesc` attribute to the image for *The Google Story* and create the corresponding XHTML file to hold the actual description. Save your files and give Audio-2-Go's main page one more run through with a screen reader.



there are no
Dumb Questions

Now your reader lets you check more out about the book, without forcing you to listen to a long description if you don't want to.

Q: Does the page with the full text description need to have the same design as the site?

A: Nope. Description pages will only be viewed by users with screen readers. So all you need is (semantically correct) marked up text. No CSS required.

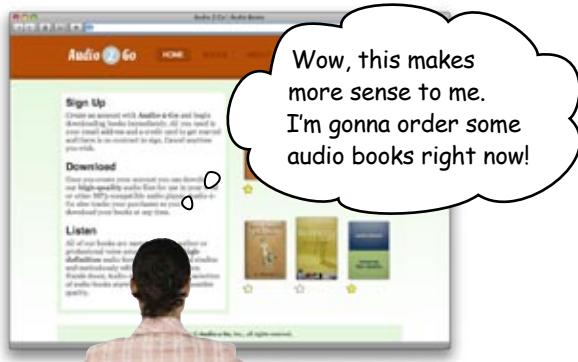
Q: Will sighted users see the LONGDESC link?

A: `longdesc` is only “visible” for people using screen readers. Sighted users won’t even know it’s there unless they view the source code for your page.

Q: Does `longdesc` work with all screen readers?

A: Unfortunately, `longdesc` is only recognized by newer screen readers. Older screen readers didn’t have the feature built into them. Thankfully, current versions of JAWS, by far the most popular screen reader, support `longdesc`.

Your improvements are making a difference for SOME Audio-2-Go customers



Legally blind



Poor motor skills in his hands



Mouseless users are still having lots of trouble getting around Audio-2-Go. There's still work ToDo on the site.

Accessibility is not just about screen readers

`alt` and `longdesc` attributes will get you a long way toward accessibility... but visually impaired users aren't your only audience. Lots of folks out there have trouble with a mouse, or just prefer using the keyboard. That changes everything.

The Web without a mouse? Yup, it's going on more than you might think. And that means you've got to check your site out *without* a mouse.



Open up the Audio-2-Go site in your favorite browser. Try getting around on the page just using your keyboard. You'll want to make heavy use of the Tab key. Can you get around? What order do things appear in? Does that order match up with the visual order of elements on your page?

TIP: If you're using Safari, press Option-Tab to cycle through all the non-form elements on a web page.

Use numbers to indicate the order that your keyboard lets you move through the Audio-2-Go website.

The screenshot shows a web browser window for the 'Audio 2 Go | Audio Books' site. The URL bar shows 'Q: Google'. The page has a header with the logo 'Audio 2 Go' and navigation links for 'HOME', 'BOOKS', and 'ABOUT'. Below the header, there are three main sections: 'Sign Up', 'Download', and 'Listen'. The 'Sign Up' section contains text about creating an account. The 'Download' section explains how to download audio files. The 'Listen' section discusses the quality of the narration. To the right, there is a 'Featured Books' section displaying six book covers with yellow star icons below them. The books include 'ELEMENTS OF LEADERSHIP', 'STATE OF DENIAL', 'The Google', 'Mary Poppins', 'BUSINESS EXCELLENCE', and 'Designing Work University'. At the bottom of the page, a green bar contains the copyright notice 'Copyright © Audio 2 Go, Inc., all rights reserved.'



Your job was to check out Audio-2-Go with only your keyboard. How did your actual results line up with what your eyes were telling you? Did the Tab key do what you expected? Here's the order of elements we cycled through:

The header and the main navigation come first.
That's good... just what we want since they're at
the top of the page.

1 HOME 2 BOOKS 3 ABOUT

10. **Sign Up**
Create an account with Audio-2-Go and begin downloading books immediately. All you need is your email address and a credit card to get started and there is no contract to sign. Cancel anytime you wish.

11. **download**
Once you create your account you can download our high-quality audio files for use in your iPod or other MP3-compatible audio player. Audio-2-Go also tracks your purchases so you can download your books at any time.

12. **Listen**
All of our books are narrated by the author or professional voice actors, recorded in high-definition audio formats in professional studios and meticulously edited in post-production. Hands down, Audio-2-Go offers the best selection of audio books anywhere at the highest possible quality.

4 ELEMENTS OF CODING 5 STATE OF DENIAL 6 Google

7 Harry Potter 8 BUSINESS SPOT 9 Designing web intimacy

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Tabbing from the heading takes us to the books. That doesn't seem right... what about all the intro text on the left of the page?



Try using Audio-2-Go without a mouse *and* without your eyes. Does the tab order seem more or less important to you when "viewing" the site through a screen reader?

Tabbing through a page should be ORDERLY

Whether you're sighted or not, the Tab key should take you through a web page in the same order that your eyes would. That means, generally, the tab order should flow top-to-bottom, left-to-right. That's the way most sites are laid out, and the way we process sites visually.

For Audio-2-Go, then, we need to make sure the left-side text (Sign Up, Download, and Listen) comes before the book offerings. That gives users more context and tracks with what they might be seeing visually. All we need ToDo to fix this problem, though, is add a `tabindex` attribute to our elements and explicitly order our elements:

```
<h2>Featured Books</h2>
<ul>
  <li><a href="books/1" tabindex="7"tabindex="8"tabindex="9"tabindex="10"tabindex="11"tabindex="12"


The books are items in a list. So for each book link, we provide a tabindex attribute.



These books will come after any elements with a lower tabindex and before any elements with a higher tabindex.


```



All of the Audio-2-Go site needs a `tabindex` overhaul. Open up `index.html`, and give a `tabindex` to all the elements that you feel need one. Keep trying out your page using just your keyboard until you're sure you've got the page just right.



Exercise Solution

Below is the majority of the Audio-2-Go index.html markup (we skipped the parts that aren't relevant). Here's how we ordered things using tabindex... did you come up with the same markup?

These got tabbed to first, but we added explicit tab indexes just to be sure.

```

<ul id="nav">
  <li><a tabindex="1" title="homepage" href="index.html">Home</a></li>
  <li><a tabindex="2" title="browse books" href="books.html">Home</a></li>
  <li><a tabindex="3" title="about Audio2Go" href="about.html">About</a></li>
</ul>
...
<div id="featured-books">
  <ul>
    <li><a tabindex="7" href="/books/1">
      </a></li>
    <li><a tabindex="8" href="/books/2">
      </a></li>
    <li><a tabindex="9" href="/books/3">
      </a></li>
    <li><a tabindex="10" href="/books/4">
      </a></li>
    <li><a tabindex="11" href="/books/5">
      </a></li>
    <li><a tabindex="12" href="/books/6">
      </a></li>
  </ul>
</div>
...
<div id="info">
  <h2><a tabindex="4" href="signup">Signup</a></h2>
  <p> Create an account with <strong>Audio-2-Go</strong> and begin downloading books immediatly. All you need is your email address and a credit card to get started and there is no contract to sign. Cancel anytime you wish.</p>
  <h2><a tabindex="5" href="download">...</a></h2>
  <p>...</p>
  <h2><a tabindex="6" href="listen">...</a></h2>
  <p>...</p>
</div>

```

These appear early in the markup but need to be ordered later for keyboard users.

We've left off the star images to save space... don't worry, there's still in our markup.

These links are further down in the markup, but this text should be tabbed to before the markup just above it, the book links.



Test Drive

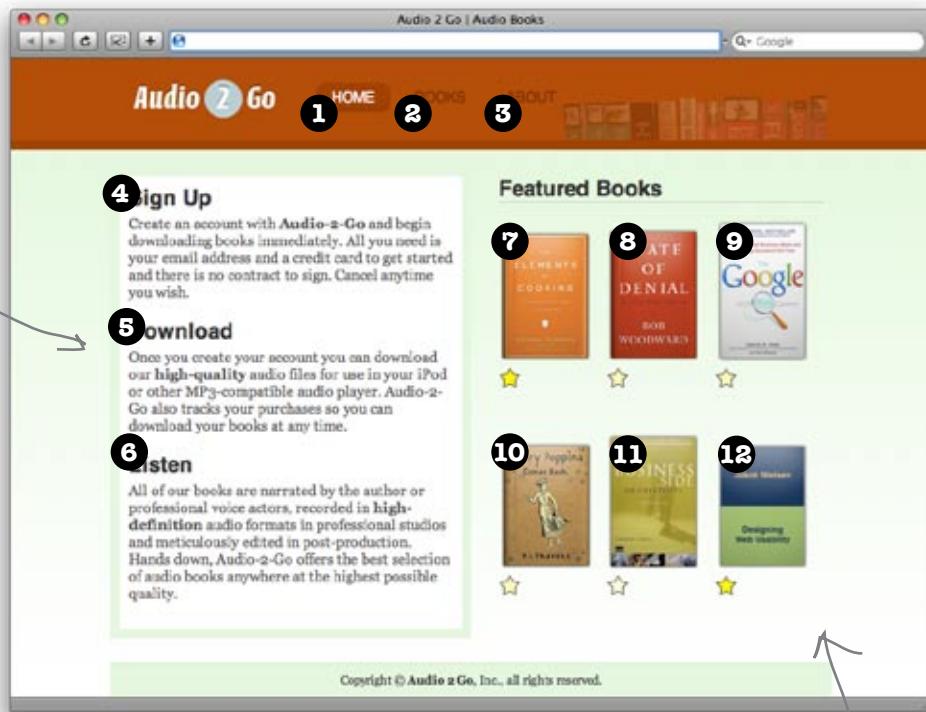
What does a keyboardless Audio-2-Go feel like now?

Update index.html to use correct tabindexes. Then, reload index.html and try working through it without a mouse.

The tab sequence should start with the page header and navigation.

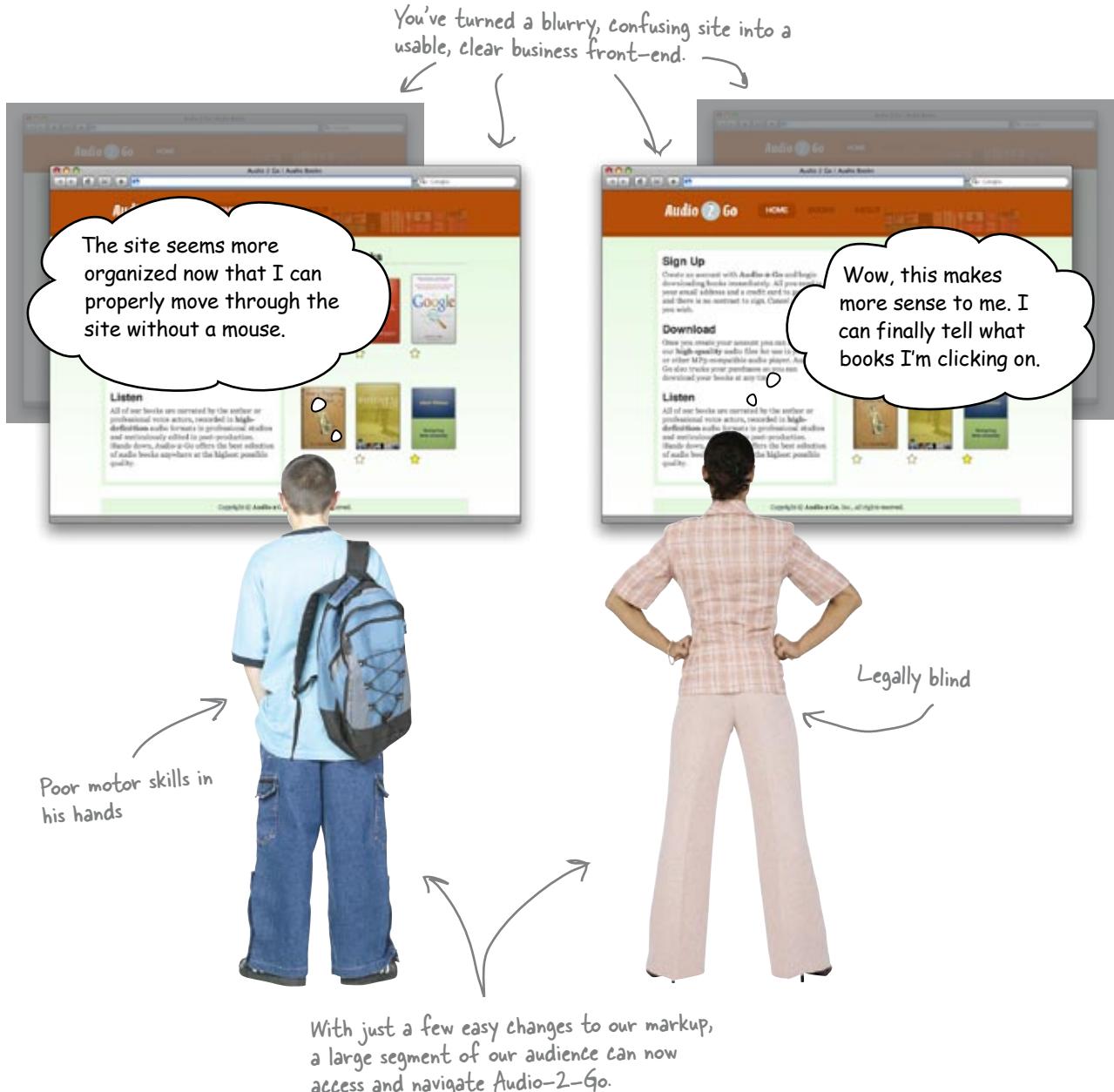
Remember, if you're using Safari, you need to Option-Tab to make use of the built in tab sequence.

The sequence should then jump to the page instructions (so users know what the site's about).



Finally, the tab sequence should step through each of these books.

Audio-2-Go is now a LOT more ACCESSIBLE



there are no Dumb Questions

Q: So without a tabindex, fields go in the order of my markup?

A: Exactly. Browsers tab through elements in the order they are detailed in your XHTML, regardless of your CSS style.

Q: So why not just put things in my XHTML in the order they'll appear on the online page?

A: That's not a bad idea... in fact, we'll talk about that a little later. Although with CSS making it easy to change display order, tabindexes still aren't a bad idea to use.

Q: The tabindex attribute can be geared toward people who prefer a keyboard over a mouse because they've got less motor control over their hands. But what about people that have no use of their hands whatsoever?

A: There are lots of web users who for one reason or another—such as paralysis or amputation—simply cannot use a mouse. Instead, they'll use alternate input systems like pointing devices such as a head-mouse, head-pointer or mouth-stick; voice-recognition software; or an eye-gaze system. Most of these systems will also pick up on your tabindexes... so that makes a logical tab order even more important.

Q: Not everyone who's got a visual impairment is blind—does accessibility apply to these people as well?

A: Absolutely. Visual disabilities not only include total blindness, but also include people who have types of low vision (also known as "partially sighted"). This includes poor acuity (vision that is not sharp), tunnel vision (seeing only the middle of the visual field), central field loss (seeing only the edges of the visual field), and clouded vision.

Q: Do visual disabilities include color blindness?

A: Yup. Basically, color blindness is a lack of sensitivity to certain colors—such as red/green or blue/yellow. Sometimes color blindness results in the inability to perceive any color whatsoever.

Q: Do we have to pay any attention to hearing disabilities?

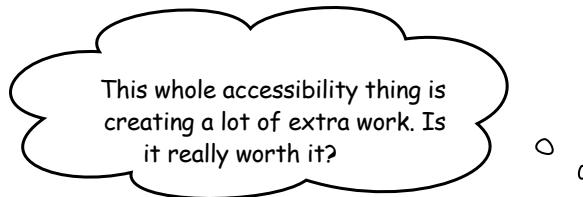
A: Both deafness and hard of hearing are things that someone who is designing an accessible website needs to worry about. This is especially important when you're working on websites that include rich media content, such as video or audio.

Q: What other kinds of disabilities should be considered when designing an accessible website?

A: Two disabilities to consider are cognitive and neurological. These include learning disabilities, such as dyslexia, attention and focus disorders, such as ADD, developmental disabilities that impact intelligence, and even memory disorders (things like unreliable short-term memory, missing long-term memory, or even the inability to recall language).

Q: How do you deal with all the cognitive and neurological disorders?

A: There are simple strategies that let you address cognitive and neurological disorders when designing an accessible website. For those with developmental disabilities, include graphics and images as an alternate way of communicating information. Also, sites with clear visual logic (something we covered back near the beginning of the book) help enormously to address many of the problems experienced by people with a wide variety of cognitive and neurological issues.



Accessibility is ALWAYS worth the extra time.

It's really easy to ask yourself why you should care about accessibility. It's unlikely that your audience will have disabilities that impact how they experience your site, right? Is this really that big of a deal?

Actually, *you almost certainly have someone with a disability trying to access your site*. The U.S. Census Bureau categorizes **19.6% of the U.S. population** as having some sort of disability. And if that's not convincing, consider just a few more reasons why accessibility is essential!



❶

The law requires you to be accessible

Section 508 of the U.S. Federal Rehabilitation Act **requires** that Federal agencies make their electronic and information technology, including websites, accessible to people with disabilities. In addition, many universities are requiring that all of their official web content be accessible.

❷

Everyone benefits from accessibility

Many of the enhancements and techniques used to make websites accessible to people with disabilities benefit those users *without* disabilities. Accessible websites are often easier to navigate, more user-friendly, and download faster.

❸

Accessibility can help your business

Design studios with a strong understanding of accessibility will have an enormous advantage over those that don't. For example, federal agencies who are required to abide by accessibility standards are sometimes unable To Do so themselves. This means that if you have experience with designing accessible websites, you'll have the opportunity to win those jobs.

❹

Accessibility is the right thing To Do

Accessible websites represent an important step toward independence for many of the disabled. They provide crucial access to fundamental governmental and educational services and information that would otherwise be unavailable to individuals with certain disabilities. Designing with accessibility in mind makes the web a better place for everyone.

Gmail – Opportunities with the Internal Revenue Service

http://mail.google.com/

Gmail Calendar Documents Photos Reader Web more ▾ audio2go@gmail.com | Settings | Older version | Help | Sign out

Compose Mail

Inbox (10)

- Starred
- Chats
- Sent Mail
- Drafts
- All Mail
- Spam
- Trash
- Contacts

- Chat

Search, add, or invite

Audio_2 Go Set status here

AIM Chat with your AIM® buddies Get started

Options Add Contact

- Labels

Edit labels

International Herald Tribune - World News, Analysis, and Global Opinions - Hezbollah's foundation Web Clip

« Back to Inbox Archive Report Spam Delete More Actions 1 of 11 Older >

Opportunities with the Internal Revenue Service Inbox | X

★ Audio 2 Go show details 11:43 AM (4 minutes ago) [Reply](#)

Audio-2 Go,

My name is Ronald Dauti, and I work for the IRS in their web services division. We've recently developed a series of audio versions of some of our most popular tax forms. We'd like to use your service as a distribution point for these forms. The downloads would be free, but we'd obviously arrange a substantial contract to covers your costs and compensate you for your services. We're in a hurry, so we're willing to pay above-average rates.

Our only requirement is that you comply with the WCAG Priority 1 guidelines. I'm sure you can figure out those details on your end.

Best,
Ronald Dauti
Internal Revenue Service

Hey, I just got this email.
This looks like a great business opportunity... but what in the world is WCAG?

[Reply](#) [Forward](#)

loading "http://mail.google.com/mail/?shwa=1#inbox"

 **Sharpen your pencil**

You're a web expert by now. What can you find out about the WCAG online? What does this mean for the Audio-2-Go site? Summarize your thoughts below:

.....
.....
.....



WCAG Priority 1

WCAG stands for Web Content Accessibility Guidelines. The W3C, the folks who come up with most web standards, have defined a set of guidelines that will allow you to build accessible sites. Follow the WCAG guidelines, and your site will be a lot more accessible than if you don't.

WCAG Priority 1 is the set of guidelines that the W3C considers as a baseline requirement. Ignore Priority 1 and you'll definitely leave out some part of a disabled audience. Here's what the Priority 1 guidelines look like:

Checklist of Checkpoints for Web Content Accessibility Guidelines 1.0

http://www.w3.org/TR/WCAG10/full-checklist.html

Priority 1 checkpoints

In General (Priority 1)	Yes	No	N/A
1.1 Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). <i>This includes:</i> images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ascii art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), stand-alone audio files, audio tracks of video, and video.			
2.1 Ensure that all information conveyed with color is also available without color, for example from context or markup.			
4.1 Clearly identify changes in the natural language of a document's text and any text equivalents (e.g., captions).			
6.1 Organize documents so they may be read without style sheets. For example, when an HTML document is rendered without associated style sheets, it must still be possible to read the document.			
6.2 Ensure that equivalents for dynamic content are updated when the dynamic content changes.			
7.1 Until user agents allow users to control flickering, avoid causing the screen to flicker.			
14.1 Use the clearest and simplest language appropriate for a site's content.			
And if you use images and image maps (Priority 1)	Yes	No	N/A
1.2 Provide redundant text links for each active region of a server-side image map.			
9.1 Provide client-side image maps instead of server-side image maps except where the regions cannot be defined with an available geometric shape.			
And if you use tables (Priority 1)	Yes	No	N/A
5.1 For data tables, identify row and column headers.			
5.2 For data tables that have two or more logical levels of row or column headers, use markup to associate data cells and header cells.			
And if you use frames (Priority 1)	Yes	No	N/A
12.1 Title each frame to facilitate frame identification and navigation.			
And if you use applets and scripts (Priority 1)	Yes	No	N/A
6.3 Ensure that pages are usable when scripts, applets, or other programmatic objects are turned off or not supported. If this is not possible, provide equivalent information on an alternative accessible page.			
And if you use multimedia (Priority 1)	Yes	No	N/A
1.3 Until user agents can automatically read aloud the text equivalent of a visual track, provide an auditory description of the important information of the visual track of a multimedia presentation.			
1.4 For any time-based multimedia presentation (e.g., a movie or animation), synchronize equivalent alternatives (e.g., captions or auditory descriptions of the visual track) with the presentation.			
And if all else fails (Priority 1)	Yes	No	N/A
11.4 If, after best efforts, you cannot create an accessible page, provide a link to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is updated as often as the inaccessible (original) page.			

http://www.w3.org/TR/
WCAG10/full-checklist.html

This document has Priority 2 and 3, too. Audio-2-Go just has to meet the Priority 1 guidelines.



Whoa... that list is huge! It's going to take forever to make the Audio-2-Go site WCAG Priority 1 compliant... and we've already done so much work, anyway.

The WCAG is exhaustive... but your changes may not need to be.

The WCAG has to cover every conceivable possibility on almost every type of site possible. That means it deals with lots of things that may not affect your site.

On top of that, lots of the WCAG checkpoints are things you should already be doing, like “Use the clearest and simplest language appropriate for a site’s content.” So many of these checkpoints may already be done! To meet Priority 1, you just have to take care of **applicable checkpoints** that aren’t already **complete**.



Sharpen your pencil

Take a look at the checklist on the previous page, or visit the WCAG checkpoints online at <http://www.w3.org/TR/WCAG10/full-checklist.html>. Below, write any changes you think need to be made to Audio-2-Go to fulfill the Priority 1 checkpoints.

.....

.....

.....

.....

.....

Sharpen your pencil Solution

Your job was to figure out what we still needed ToDo with Audio-2-Go to make it WCAG Priority 1 compliant.



1.1 Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). *This includes:* images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ascii art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), stand-alone audio files, audio tracks of video, and video.

We've already done this by providing alt and longdesc attributes to our images.



2.1 Ensure that all information conveyed with color is also available without color, for example from context or markup.

This includes graphics and icons. Those stars that represent ratings on each book could be a problem... and what does the site look like without color?



6.1 Organize documents so they may be read without style sheets. For example, when an HTML document is rendered without associated style sheets, it must still be possible to read the document.

This is sort of like tabindexes... it's about order. But this time, the order has to make sense in the markup itself. We've got some problems here.

ToDo

~~Provide a text equivalent for all non-text elements.~~

All color information must be displayed without color as well.

Organize documents so they can be read without stylesheets.

Here's the Audio-2-Go ToDo list we came up with. How does it compare with the list of things you thought we needed ToDo?

there are no
Dumb Questions

Q: What is the difference between WCAG Priority 1 and Section 508?

A: There are a few main differences. First, WCAG is a recommendation that was written by the W3C, the Internet's governing body. Although the W3C has no authority to enforce its recommendation, it is considered the standard in making sure sites are accessible to individuals with disabilities. Section 508 is a US Government requirement that is based on the WCAG Priority 1 standards. 508 requires all government agencies and companies that do business with the government to comply with the law. 508 is not enforceable in the private sector as long as a company isn't doing business with the government.

Q: Can you be arrested for not complying with WCAG?

A: Not at all. WCAG is strictly a guide for making your website accessible. Plus, the W3C doesn't have authority to arrest you (or fine you, for that matter). Still, ignoring WCAG is like ignoring a part of your audience, and that's not a good thing. Even a few days spent on accessibility can have a huge impact on your site.

Q: Who decides if my site meets the guidelines?

A: For the most part, you decide. If you have followed along with guidelines and made an effort to make your site as accessible as possible to users with disabilities, you can call yourself accessible. Because Section 508 is a law, there are online services you can use that check and make sure your code is accessible. They will often allow you to post "badges" on your site that advertise the fact that your site meets the 508 requirement. Similar services are also available for the WCAG.

**Ignoring accessibility is
 ignoring a part of your
 AUDIENCE. It hurts you, your
 site, and your users.**

**Think about accessibility as
 a CRITICAL PART of every
 website that you design.**

Color shouldn't be your ONLY form of communication

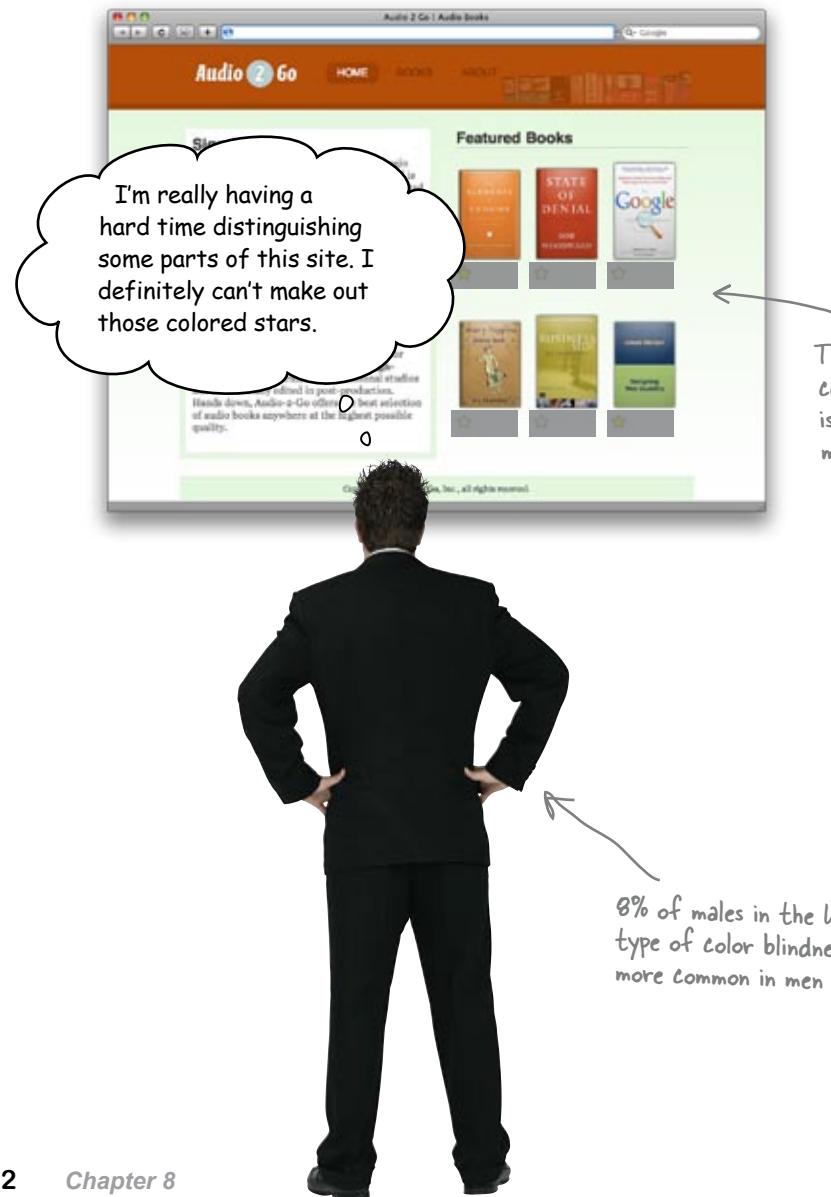
You already know that color has an emotional impact. It'd be hard to imagine a site *without* color... but that's just how some people view at least a part of your websites. That's why you must convey everything on your site with more than **just** color.

ToDo

~~Provide a text equivalent for all non-text elements.~~

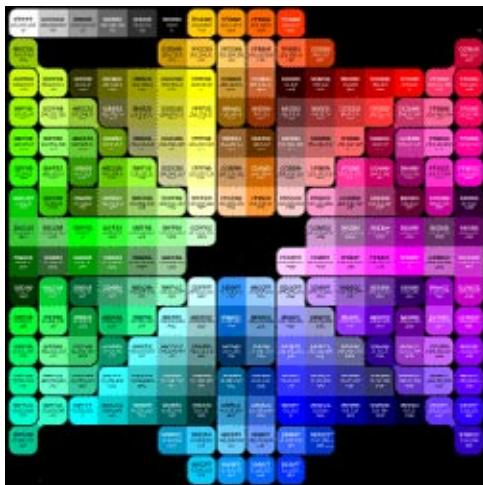
All color information must be displayed without color as well.

Organize documents so they can be read without stylesheets.



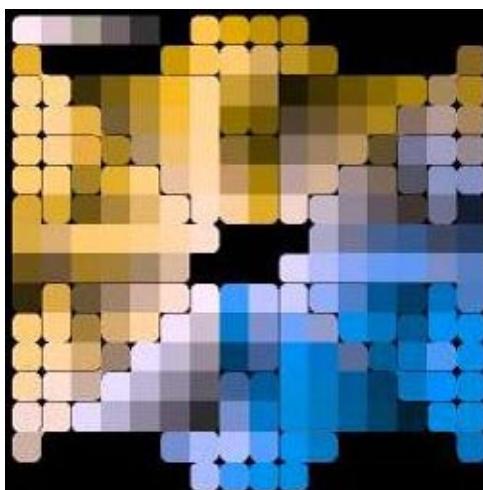
Life through web-safe eyes...

You've probably heard about web-safe colors before. Those are the colors that most people say are going to look consistent on different resolutions and monitors. Here's a palette of web-safe colors:



Life through color-blind eyes...

But is this palette really "web-safe"? Take a look at the same palette through the eyes of someone with color blindness:



These two palettes look completely dissimilar... which one do your users see?



How do you think color-blindness can affect your choice of color palette? Do the triadic and tetradic color palettes offer any help in dealing with color blindness?

* These images are from a scan of a Visibone book (<http://www.visibone.com/products/browserbook.html>).

Audio-2-Go, via color-blind eyes

Let's take a look at Audio-2-Go through a few different sets of eyes. Depending on the cones available in the viewer, our nicely designed Audio-2-Go site can look totally different:



Here is the original color scheme viewed by someone with no color blindness.

Original



Deutanopia (no green cones)

This is a rarer type of color blindness that affects yellow tones. The stars are completely useless in this view... which definitely violates WCAG Priority 1.

Tritanopia (no blue cones)

Protanopia looks very similar to Deutanopia when comparing the Audio-2-Go site. The page looks bland, and the stars seem to blur together a fair bit.

Protanopia (no red cones)

Those stars are a real problem

So the stars at Audio-2-Go are a problem. It's not bad that they're in color, but it's bad that they *only* convey information through color. Remember one of the easiest ways to fix bad graphics or navigation?

Add text!

So for the ratings, we can simply add in a textual rating. Then, we can add the stars as a background image, just like we did with navigation back in Chapter 6:

```
<div id="featured-books">
  <ul>
    <li><a tabindex="7" href="/books/1">
      </a><br />
      <span class="rating high">Rating: 8</span> ←
    </li>
    <li><a tabindex="8" href="/books/2">
      </a><br />
      <span class="rating medium">Rating: 5</span>
    </li>
    <li><a tabindex="9" href="/books/3">
      </a><br />
      <span class="rating medium">Rating: 6</span>
    </li>
    <li><a tabindex="10" href="/books/4">
      </a><br />
      <span class="rating low">Rating: 3</span>
    </li>
    <li><a tabindex="11" href="/books/5">
      </a><br />
      <span class="rating high">Rating: 9</span>
    </li>
    <li><a tabindex="12" href="/books/6">
      </a><br />
      <span class="rating medium">Rating: 6</span>
    </li>
  </ul>
</div>
```

Add a line break and a span to hold the rating number.



index.html

We'll class the span "rating" and then give it another class depending on the rating (low, medium and high respectively)

there are no
Dumb Questions

Q: So we can't use visual indicators, like the stars, anymore?

A: You definitely can. You just can't **only** use visual indicators. So if you use the visual of a thermometer, you'd need to put a textual description next to that thermometer.

still Background images are your friend

Now we can add the stars back into the page, using CSS and the background property. So we need to make some additions to our stylesheet, `screen.css`:

```
#featured-books li .rating {  
  padding: 4px 0 4px 30px;  
  font-family: Helvetica, sans-serif;  
  font-size: small;  
  text-transform: uppercase;  
}  
  
.high {  
  background: url('../images/star_high.png') no-repeat left;  
}  
  
.medium {  
  background: url('../images/star_medium.png') no-repeat left;  
}  
  
.low {  
  background: url('../images/star_low.png') no-repeat left;  
}  
  
```

We need a new high-level class for ratings.

The rating class needs a 30px left padding to clear the way for the star.

Depending on the class, we will display the appropriate colored star.



screen.css



Test Drive

Color, without depending on color?

Update your versions of `index.html` and `screen.css`. Then reload the Audio-2-Go page and check out the featured ratings of the books.

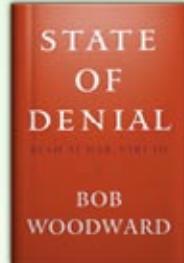
We can tick off this checkpoint now.

Now there's a graphical and textual indication of a book's rating.

Featured Books



→ RATING: 8



→ RATING: 5



→ RATING: 6

ToDo

Provide a text equivalent for all non-text elements.

All color information must be displayed without color as well.

Organize documents so they can be read without stylesheets.

There's more to ordering than just tabindexes

You've already used the `tabindex` attribute to make sure that the Tab key moves through your document in the right order. But the WCAG goes further: since there are certain accessibility devices that don't use standard keyboards, your actual **markup** has to be in order.

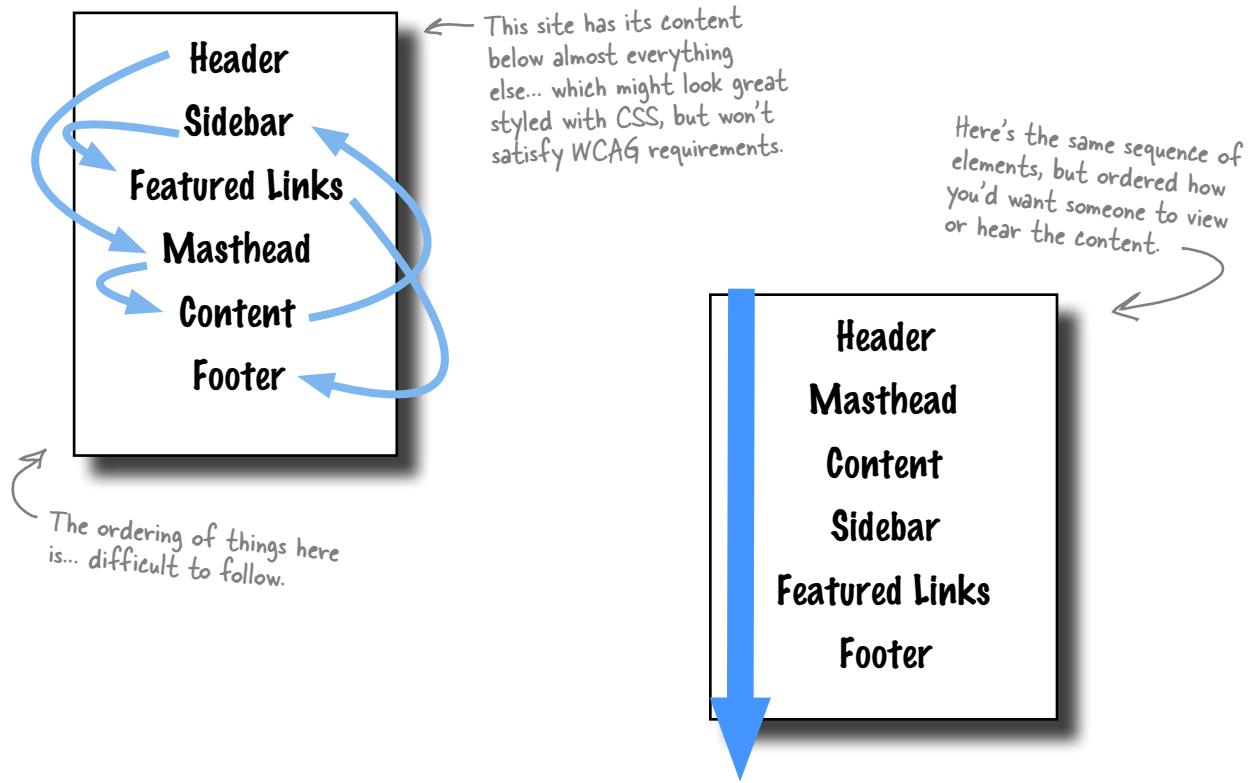
In other words, to meet WCAG Priority 1, you've got to order your XHTML in the sequence your content should be viewed, regardless of any CSS *and* tabindexing.

ToDo

~~Provide a text equivalent for all non-text elements.~~

~~All color information must be displayed without color as well.~~

Organize documents so they can be read without stylesheets.



Watch it!

Just because your XHTML is standards compliant doesn't mean your XHTML meets this WCAG checkpoint.

Having your site validate as valid XHTML just means that your markup is correct and without errors. The WCAG checkpoints make sure that you are using that markup to make your site as accessible to as many people as possible. The two are related, but not at all the same.



It's time to tick off another Priority 1 checkpoint with Audio-2-Go. Here are the relevant parts of the Audio-2-Go index.html. It's up to you to re-order the content. Good luck!

The tab indexes give you some ordering... but the actual markup isn't in the right sequence.

```

<ul id="nav">
  <li><a tabindex="1" title="homepage" href="index.html">Home</a></li>
  <li><a tabindex="2" title="browse books"
    href="books.html">Home</a></li>
  <li><a tabindex="3" title="about Audio2Go"
    href="about.html">About</a></li>
</ul>
...
<div id="featured-books">
  <ul>
    <li><a tabindex="7" href="/books/1">
      </a></li>
    <li><a tabindex="8" href="/books/2">
      </a></li>
    <li><a tabindex="9" href="/books/3">
      </a></li>
    <li><a tabindex="10" href="/books/4">
      </a></li>
    <li><a tabindex="11" href="/books/5">
      </a></li>
    <li><a tabindex="12" href="/books/6">
      </a></li>
  </ul>
</div>
...
<div id="info">
  <h2><a tabindex="4" href="signup">Signup</a></h2>
  <p> Create an account with <strong>Audio-2-Go</strong> and begin
  downloading books immediatly. All you need is your email address and
  a credit card to get started and there is no contract to sign. Cancel
  anytime you wish.</p>
  <h2><a tabindex="5" href="download">...</a></h2>
  <p>...</p>
  <h2><a tabindex="6" href="listen">...</a></h2>
  <p>...</p>
</div>

```

Hint: You may want to remove the tabindexes and use Tab to see how your page is "naturally" ordered.



index.html



Exercise Solution

Your job was to rearrange the chunks of the Audio-2-Go page so that it has a more logical flow when rendered without a style sheet. Here's what we did.

```
<ul id="nav">
  <li><a tabindex="1" title="homepage" href="index.html">Home</a></li>
  <li><a tabindex="2" title="browse books"
    href="books.html">Home</a></li>
  <li><a tabindex="3" title="about Audio2Go"
    href="about.html">About</a></li>
</ul>
```

```
<div id="info">
  <h2><a tabindex="4" href="signup">Signup</a></h2>
  <p> Create an account with <strong>Audio-2-Go</strong> and begin
  downloading books immediately. All you need is your email address
  and a credit card to get started and there is no contract to sign.
  Cancel anytime you wish.</p>
  <h2><a tabindex="5" href="download">...</a></h2>
  <p>...</p>
  <h2><a tabindex="6" href="listen">...</a></h2>
  <p>...</p>
</div>
```

← Flipping the “info” `<div>` and “featured-books” `<div>` makes the page display in the proper order when a stylesheet is disabled or unavailable.

```
<div id="featured-books">
  <ul>
    <li><a tabindex="7" href="/books/1"></a></li>
    <li><a tabindex="8" href="/books/2"></a></li>
    <li><a tabindex="9" href="/books/3"></a></li>
    <li><a tabindex="10" href="/books/4"></a></li>
    <li><a tabindex="11" href="/books/5"></a></li>
    <li><a tabindex="12" href="/books/6"></a></li>
  </ul>
</div>
```



Test Drive

We don't need no stinkin' tabindexes.

Rearrange the order of your index.html, and then reload the page. Things should look the same, but now we're WCAG compliant.



WCAG Priority 1 makes tabindex unnecessary.

Using the Tab key is a great way to verify your site stays in order, even when you add new sections.



We've got another item we can cross off our list. We're done, right?

ToDo

~~Provide a text equivalent for all non-text elements.~~

~~All color information must be displayed without color as well.~~

~~Organize documents so they can be read without style sheets.~~

Books | Audio 2 Go

Audio 2 Go

HOME BOOKS ABOUT

Top Titles

The Black Swan	\$19.99
Presentation Zen	\$12.99
The Digital Photography Book	\$12.99
Mac OS X Leopard: The Missing Manual	\$15.99
The iPhone Developer's Cookbook	\$19.99
slide:ology	
The Nurnberg Files	
Spore	

Featured Books

★	★	★
★	★	★

Wait a second. Can you take a look at our Books section? I just want to make sure we didn't miss anything...

Copyright © Audio 2 Go, Inc. all rights reserved.





Sharpen your pencil

What WCAG checkpoints need to be taken care off on the Books page? Look back through the checklist on page 298 (or online), and see if there are any additional checkpoints that might apply... write what you think you need ToDo in the ToDo list below.

ToDo

Provide a text equivalent for all non-text elements.

All color information must be displayed without color as well.

Organize documents so they can be read without stylesheets.

These all have to be handled for the Top Titles page as well.

Hint: the Top Titles list is a table.



Exercise

Now that you know what needs to be done to the Books page, open up `books.html`. It should be in your chapter download files. Update the XHTML to be WCAG compliant, and meet all priority 1 checkpoints. Then turn the page to see if you caught everything.



Exercise Solution

Your job was to update the books.html XHTML to be WCAG compliant and meet all priority 1 checkpoints.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
  <title>Books | Audio 2 Go</title>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
  <link rel="stylesheet" href="stylesheets/screen.css" type="text/css" media="screen" />
</head>
<body>
  <div id="wrap">
    <div id="header">
      <h1></h1>
      <ul id="nav">
        <li><a title="Audio 2 Go home" href="#">Home</a></li>
        <li><a class="active" title="Audio books" href="books.html">Books</a></li>
        <li><a title="About Audio 2 Go" href="#">About</a></li>
      </ul>
    </div>
    <div id="book-list">
      <h2>Top Titles</h2>
      <table cellpadding="0" cellspacing="0" border="1">
        <tr>
          <th>Book Title</th>
          <th>Price</th>
        </tr>
        <tr>
          <td>The Black Swan</td>
          <td class="price">$19.99</td>
        </tr>
        <tr>
          <td>Presentation Zen</td>
          <td class="price">$12.99</td>
        </tr>
        <tr>
          <td>The Digital Photography Book</td>
          <td class="price">$12.99</td>
        </tr>
        <tr>
          <td>Mac OS X Leopard: The Missing Manual</td>
        </tr>
      </table>
    </div>
  </div>

```

ToDo

Provide a text equivalent for all non-text elements.

All color information must be displayed without color as well.

Organize documents so they can be read without stylesheets.

All tables need row and column headings.

Did you get this one? Since the Books page has a table, we've got to add table headings.

5.1 For data tables, identify row and column headers.

We just need another table row, with a heading for each column.

```

        <td class="price">$15.99</td>
    </tr>
    <tr>
        <td>The iPhone Developer's Cookbook</td>
        <td class="price">$19.99</td>
    </tr>
    <tr>
        <td>slide:ology</td>
        <td class="price">$7.99</td>
    </tr>
    <tr>
        <td>The Numerati</td>
        <td class="price">$11.99</td>
    </tr>
    <tr>
        <td>Spore: Official Game Guide</td>
        <td class="price">$21.99</td>
    </tr>
</table>
</div>
<div id="featured-books">
    <h2>Featured Books</h2>
    <ul>
        <li><a href="books/1"></a>
            <br /><span class="rating high">Rating: 8</span></li>
        <li><a href="books/2"></a>
            <br /><span class="rating medium">Rating: 5</span></li>
        <li><a href="books/3"></a>
            <br /><span class="rating medium">Rating: 6</span></li>
        <li><a href="books/4"></a>
            <br /><span class="rating low">Rating: 3</span></li>
        <li><a href="books/5"></a>
            <br /><span class="rating high">Rating: 9</span></li>
        <li><a href="books/6"></a>
            <br /><span class="rating medium">Rating: 6</span></li>
    </ul>
</div>
<div id="footer">
    <p>Copyright &copy; <strong>Audio 2 Go</strong>, Inc., all rights reserved.</p>
</div>
</div>
</body>
</html>

```

This page was already ordered correctly, with headings, then the Top Books list, and then the features. So we didn't need To Do any re-ordering.

This is the same change we made to the main page: we need text, not just images, for the book ratings.



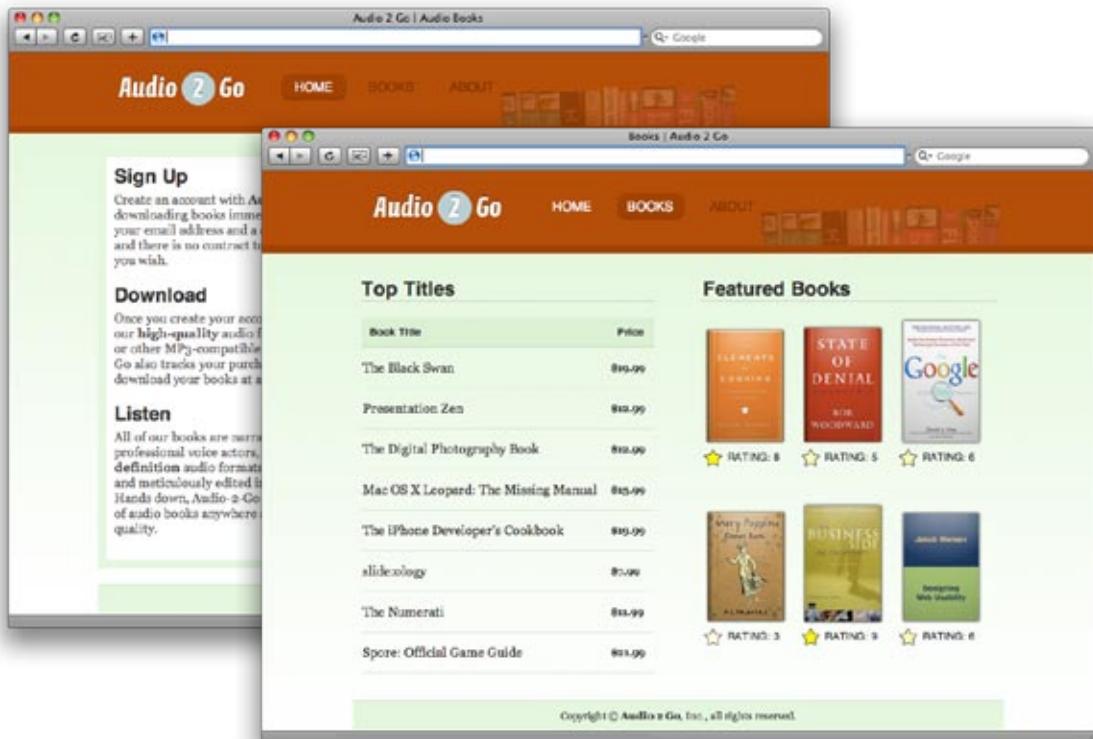
Test Drive

Test Audio-2-Go's accessibility

It's all well and good to implement accessibility measures, but you also need to test your site. So, how can you do this? Well, there are a couple of ways:

Get a copy of the assistive technologies in question (like a screen reader), and take the site for a test drive yourself. Or, even better, you can use software, such as Cynthia Says, that automatically checks a site for WCAG compliance: <http://www.contentquality.com/>

Update both the home page and the Books page, and see how Audio-2-Go looks.



Give Audio-2-Go a test with the
Cynthia Says validator.

You'll never believe the email
 I just got! You really hit it out of
 the park with the updates you made.
 And I hope you don't mind not paying
 taxes anymore...



Gmail - Opportunities with the Internal Revenue Service

http://mail.google.com/

Gmail Calendar Documents Photos Reader Web more

audio2go@gmail.com | Settings

Compose Mail

Inbox (10)

Starred Chats Sent Mail Drafts All Mail Spam Trash Contacts Chat

Search, add, or invite

Audio 2 Go Set status here

AIM Chat with your AIM® buddies Get started

Options Add Contact

Labels Edit labels

Loading "http://mail.google.com/mail/?shva=1#inbox"

International Herald Tribune - World News, Analysis, and Global Opinions - Hezbollah

« Back to Inbox Archive Report Spam Delete More Actions

Say goodbye to taxes forever!

Audio 2 Go show details 11:43 AM (4 minutes ago) [Reply](#)

Audio 2-Go,

Great work on your site! I had our team look at what you've done, and we really love it. We ran it through all of our validators, and you've got valid XHTML, and you've met WCAG Priority 1. Nice work! We'd like to move forward with distributing our tax forms. We're in a bit of a budget crunch here, but we've come up with some creative ideas to compensate you for your work. What would you think about you never paying taxes again? As long as you'll host our forms, consider yourself a tax-free entity. Enjoy!

Oh, and by the way... if you have any employees or contractors, we're willing to give two of them the same tax-free exemption you'd enjoy. Great work!

Best,
 Ronald Dauti
 Internal Revenue Service

Looks like being accessible is really paying off!

Reply Forward

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About these links



BULLET POINTS

- Accessibility is both the process and the techniques used to create a site that can be used by someone with a disability.
- A screen reader is a piece of software used by the blind and the visually impaired that reads the text of a website aloud.
- The `ALT` attribute (which is part of the `IMG` element) allows you to provide an alternate text description for an image—which is read by the screen reader.
- `LONGDESC` is an attribute of the `IMG` element which provides a link to a page which contains a text description of an image that is too long for an `ALT` attribute.
- People who have lost motor control of their hands often use the tab key instead of a mouse to move from link to link on a webpage.
- `TABINDEX` lets you manually set the position of a specific link in a tab sequence.
- The Web Content Accessibility Guidelines (WCAG) from the W3C were the first major effort to establish guidelines for accessible design—it consists of fourteen guidelines, each with three checkpoint levels.
- You don't have to worry about items on the WCAG checklist that don't apply to your site.
- Organize the markup of your page so that it reads logically if it were not rendered with a style sheet.
- Make sure that all information conveyed with color is also available without color.
- If you use tables in your site, make sure that columns and rows have headers.
- Use software like Cynthia Says to check the accessibility of your site.