

Web Accessibility Training

Federal IT Accessibility Initiative Implementing Section 508 of the Rehabilitation Act

References: <http://www.Section508.gov>
<http://www.itpolicy.gsa.gov/cita/>

Material excerpted from Worldwide Web Consortium (W3C)
Web Accessibility Initiative (WAI)
<http://www.w3.org/wai/>

GSA – Office of Governmentwide Policy

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**GSA Office of Governmentwide Policy
Federal IT Accessibility Initiative**

Designing Accessible Websites – 3 hour Seminar

Agenda

Start time **Welcome** – Ron Kelly, Director GSA’s 508 Project Team

Policy and Direction – Keith Thurston, Policy Lead, 508 Project Team

Demonstration of accessible and inaccessible sites – Pat Sheehan,
Disability Specialist, Dept. of Veterans Affairs

After 30 min. **Instruction** led by Kim McClaron, Knowlogy

After 90 min. **Break** for 15 minutes

After 150 min. **Question and answers** – including call-in from remote sites

After 180 min. **Complete feedback sheets** and wrap-up

:

Section 508 (NPRM) Web Accessibility Standards

This page contains the NPRM's specific requirements for Web-based information or applications. The Section 508 Web site [<http://www.section508.gov>] has a link to the NPRM under Proposed Standards. The Web site of the Center for Information Technology Accommodation (CITA) [<http://www.itpolicy.gsa.gov/cita>] has a link to a document titled: "A Concordance of NPRM Requirements and WCAG Checkpoints and Curriculum Examples." The Concordance relates the requirements listed below to appropriate examples in the W3C Curriculum for Web Content Accessibility.

1194.23 Component specific requirements.

(c) Web-based information or applications.

- (1) A text equivalent for every non-text element shall be provided via "alt" (alternative text attribute), "longdesc" (long description tag), or in element content.
- (2) Web pages shall be designed so that all information required for navigation or meaning is not dependent on the ability to identify specific colors.
- (3) Changes in the natural language (e.g., English to French) of a document's text and any text equivalents shall be clearly identified.
- (4) Documents shall be organized so they are readable without requiring an associated style sheet.
- (5) Web pages shall update equivalents for dynamic content whenever the dynamic content changes.
- (6) Redundant text links shall be provided for each active region of a server-side image map.
- (7) Client-side image maps shall be used whenever possible in place of server-side image maps.
- (8) Data tables shall provide identification of row and column headers.
- (9) 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.
- (10) Frames shall be titled with text that facilitates frame identification and navigation.
- (11) Pages shall be usable when scripts, applets, or other programmatic objects are turned off or are not supported, or shall provide equivalent information on an alternative accessible page.
- (12) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.
- (13) An appropriate method shall be used to facilitate the easy tracking of page content that provides users of assistive technology the option to skip repetitive navigation links.

*“The power of the Web is in its universality.
Access by everyone regardless of disability is an essential aspect.”*

Tim Berners-Lee, W3C Director and inventor of the World Wide Web

The World Wide Web offers unprecedented access to information, electronic commerce, educational opportunities, employment opportunities, workplace communication, government services, recreation, and more. However, there are currently barriers on the Web for people with visual, hearing, physical and cognitive disabilities.

The World Wide Web Consortium (W3C) is committed to promoting a high degree of usability for people with disabilities. Web accessibility solutions also benefit other users, such as those using mobile devices, those with low bandwidth connections, or without audio output on a device. W3C's Web Accessibility Initiative (WAI), in coordination with industry, disability organizations, research centers and government, addresses accessibility of the Web through five complementary activities:

- Ensuring that Web technologies support accessibility
- Developing guidelines for accessibility
- Developing tools to evaluate & facilitate accessibility
- Conducting education and outreach
- Coordinating with research and development

W3C/WAI RESOURCES:

Guidelines:

- Web Content** Accessibility Guidelines (WCAG): <http://www.w3.org/TR/WCAG>
Authoring Tool Accessibility Guidelines (ATAG): <http://www.w3.org/TR/ATAG>
User Agent Accessibility Guidelines (UAAG): <http://www.w3.org/TR/UAAG>

Additional resources linked from the WAI home page <http://www.w3.org/WAI> include:

- Getting Started: Making a Web Site Accessible
- Curriculum on Web Content Accessibility Guidelines
- Online Overview of WAI
- Techniques for WCAG, ATAG, UAAG
- Accessibility Features of HTML, CSS, SMIL
- Fact Sheets for WCAG, ATAG
- Alternative Web Browsing
- Evaluation and Repair Tools
- Policies Relating to Web Accessibility
- Quick Tips to Make Accessible Web Sites

QUICKTIPS:

The “Quick Tips to Make Accessible Web Sites” on the back of this flyer provide an introduction and memory prompt for key concepts of the Web Content Accessibility Guidelines. The complete guidelines are available at <http://www.w3.org/TR/WCAG>, and include a prioritized checklist. Copies of the Quick Tips in a business-card sized format can be ordered from <http://www.w3.org/WAI/References/QuickTips>.

W3C's Web Accessibility Initiative International Program Office is supported in part by funding from the U.S. National Science Foundation; U.S. Department of Education's National Institute on Disability and Rehabilitation Research; the European Commission's DG XIII Telematics for Disabled and Elderly Programme; Government of Canada, Industry Canada; Microsoft Corporation; IBM/Lotus; and Bell Atlantic.

QUICK TIPS TO MAKE ACCESSIBLE WEB SITES

- **Images & animations.** Use the **alt** attribute to describe the function of each visual.
- **Image maps.** Use client-side **MAP** and text for hotspots.
- **Multimedia.** Provide captioning and transcripts of audio, and descriptions of video.
- **Hypertext links.** Use text that makes sense when read out of context. For example, avoid “click here.”
- **Page organization.** Use headings, lists, and consistent structure. Use **CSS** for layout and style where possible.
- **Graphs & charts.** Summarize or use the **longdesc** attribute.
- **Scripts, applets, & plug-ins.** Provide alternative content in case active features are inaccessible or unsupported.
- **Frames.** Use **NOFRAMES** and meaningful titles.
- **Tables.** Make line-by-line reading sensible. Summarize.
- **Check your work.** Validate. Use tools, checklist, and guidelines at www.w3.org/TR/WCAG.

FOR COMPLETE GUIDELINES & CHECKLIST: WWW.W3.ORG/WAI



Welcome!

Federal IT Accessibility Initiative

Implementation of Section 508

Office of Governmentwide Policy

1



Background

- ◆ Law
 - ◆ Game Plan
- 2



Personal Digital Assistants

- ◆ Palm computers
 - Palm VII (wireless Internet “clipping push-pull technology)
 - PageWriter 2000
- ◆ Web aware Cell Phones
 - Smart Phones – Motorola i1000 plus w/built-in browser
 - Programmable Phones
- ◆ Cutting-edge web-aware devices
 - Organizers – StarTAC Clip-on Organizer

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The Thirteen Rules

1. Provide Alternate Text
2. Meaning must be independent of color
3. Identify language changes
4. Style sheet independent
5. Update equivalents for dynamic content
6. Redundant text links for server-side image maps
7. Use client-side image maps whenever possible
8. Row and Column Headers in Data Tables
9. Data cells must be associated with header cells
10. Title all frames
11. Script independent
12. Synchronize multimedia equivalents
13. Provide option to skip repetitive links

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Thirteen Key Words

1. Alt – Text
2. Color
3. Language
4. Stylesheets
5. Dynamic Content Update
6. Server-Side Image Maps
7. Client-Side Image Maps
8. Tables
9. Cells
10. Frame
11. Plug-ins
12. Multimedia
13. Repetitive Links

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1. Alternate Text (1/3)

A text equivalent for every non-text element shall be provided via “alt” (alternative text attribute), “longdesc” (long description tag), or in element content.

- ◆ Images and graphical buttons
- ◆ Graphical representations of text (including symbols)
- ◆ Image map regions

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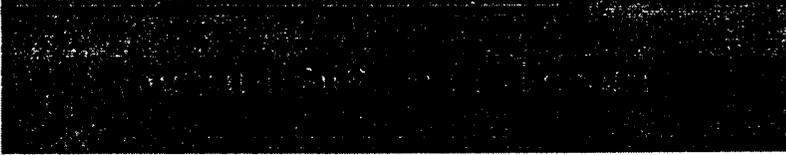




Web Accessibility

Demonstration of the Issue

3



**A Seminar Covering the Requirements of
Sub-Section 1194.23c.**

**Illustrated with examples from the W3C
Curriculum for Web Content Accessibility
Guidelines 1.0**

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Expectations



- ◆ Understand the issues
- ◆ Concise examples for implementation
- ◆ Scope of usability
- ◆ Solutions presented using HTML version 4.0

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Prerequisites



- ◆ This course is intended for web-masters or those with equivalent knowledge
- ◆ Understand HTML tags and their usage

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Images and graphical buttons

•``

Explain the view of the drawing

•``

Explain the view of the drawing and the purpose of the drawing as used in the hyperlink

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...: WAI Web Content Accessibility Curriculum - slide "1.1a - a text equivalent for images an Page 1 of 1

Example for Checkpoint 1.1a - a text equivalent for images and graphical buttons.

Example
Slide 2 of 120

Priority 1

For a simple, decorative or incidental image, a brief description may be all that is necessary: e.g.



This drawing of a house is just a drawing of a house, so the code could be:

```
<IMG SRC="home.gif" ALT="Drawing of a house.">
```



If the image is linked, you must describe the destination or purpose of the link – not the image, e.g.

Here, the drawing of a house is a button that links to the home page, so the code could be:

```
<A HREF="home.htm">  
<IMG SRC="home.gif" ALT="Link to the Home page.">  
</A>
```

 To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1a continues

[Introduction](#) [Guidelines](#) [Checkpoints](#) [Examples](#)



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Example for Checkpoint 1.1a, continued.

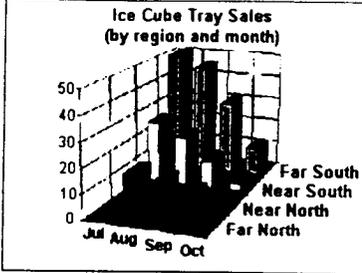
Example
Slide 3 of 120



Priority 1

If the information contained in the image is important to the meaning of your page (i.e. some important content would be lost if the image was removed), then you must provide a longer description than the "alt" attribute can reasonably display. The "longdesc" attribute was created for this reason.

```
<IMG SRC="graph1.gif"
LONGDESC="graph1.htm" ALT="3-
d sales chart.">
```



Future browsers or other agents will provide an optional link to the description file called "graph1.htm".

[To Checkpoints for Guideline 1](#)

Next slide: Example for Checkpoint 1.1a continues

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Example for Checkpoint 1.1a, continued.

Example
Slide 4 of 120



Priority 1

If you use the OBJECT element to place an image,



then include the text alternative in the content of the OBJECT element, e.g.

```
<OBJECT data="home.gif" type="image/gif" height=100 width=100>
Place the short or long description (or link to a long
description file) here.
</OBJECT>
```

[To Checkpoints for Guideline 1](#)

Next slide: Example for Checkpoint 1.1b

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Graphical representations of text (including symbols)

•

Explaining that the view of the drawing contains text

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...: WAI Web Content Accessibility Curriculum - slide "1.1b - a text equivalent for graphical Page 1 of 1

Example for Checkpoint 1.1b - a text equivalent for graphical representations of text (including symbols).

Example
Slide 5 of 120



Priority 1

For an image that is simply a bit-map of text (because you want to use special graphical font-effects or other transformations that would be difficult or impossible using style sheets), provide the text equivalent, e.g.



Where a special markup language for symbols exists - such as MathML - use that instead of a simple text equivalent. See the example for Checkpoint 3.1 for more details.

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1c

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Image map regions

```
<A HREF="img/imgmapsenses.map">
<IMG ISMAP SRC="imgmapsenses.gif"
ALT="Please use the following links instead of this imagemap."
</A><BR>
[ <A HREF="hearing.htm">Sense of Hearing Section</A> |
<A HREF="taste.htm">Sense of Taste Section</A> |
<A HREF="sight.htm">Sense of Vision Section</A> |
<A HREF="touch.htm">Sense of Touch Section</A> |
<A HREF="smell.htm">Sense of Smell Section </A> ]
```

Since the alt text is necessary for the server-side image map to convey the redundant links below the image.

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WAI Web Content Accessibility Curriculum - slide "1.1c - a text equivalent for image map" Page 1 of 1

Example for Checkpoint 1.1c - a text equivalent for image map regions.

Example
Slide 6 of 120



Priority 1: for server side image maps

For the user of a non-graphical browser or for someone who does not use a traditional pointing device (like a mouse or touch-screen), a page that uses an imagemap as the sole means of navigation can be quite inaccessible. There are a number of techniques available to you to ensure that your image maps are accessible. All of those techniques involve providing a text equivalent for the critical functions of the map: namely the active areas that activate links to other information.

See the example for Checkpoint 1.2 for a more detailed treatment of using a server side image map.

Priority 3: for client side image maps

See the example for Checkpoint 1.5 for more information on using a client side image map.

To Checkpoints for Guideline 1.

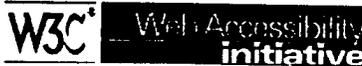
Next slide: Example for Checkpoint 1.1d

Introduction Guidelines Checkpoints Examples



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Alternate Text (2/3)

- ◆ Animations (e.g., animated GIFs)
- ◆ Applets and programmatic objects
- ◆ ASCII art (two slides)
- ◆ Frames.
- ◆ Scripts
- ◆ Images used as List Bullets
- ◆ Images used as "spacers"

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Animations (e.g., animated GIFs)

```
<IMG SRC="fish.gif" ALT="A green animated cartoon fish swimming up and down the right side of the image boundary.">
```

Be descriptive of the actions and appearance of the animation to give all users the same experience.

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Example for Checkpoint 1.1d - a text equivalent for animations (e.g., animated GIFs).

Example Slide 7 of 120



Priority 1

For example,



```
<IMG SRC="ani-bal.gif" ALT="An animated expanding and bursting balloon.">
```

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1e

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Applets and programmatic objects

```
<APPLET code="Slogan.class" width="400" height="30" alt="Java applet: colorful text.">
```

If you were using a Java-enabled browser, you would see the text "Just do it" splashing across the screen with multiple random colors, instead of this paragraph.

```
</APPLET>
```

The APPLET tag was replaced with the OBJECT tag in version 4.0. OBJECT should be used however in both cases where users can not see the results on the screen, the developer should include alt text for the applet or programmatic object and equivalent text

Example for Checkpoint 1.1e - a text equivalent for applets and programmatic objects.

Example
Slide 8 of 120
◀ ▶

Priority 1

APPLET is deprecated in HTML 4.0 (which means you should start using the new OBJECT element instead), but it is still in frequent use. If you are modifying an APPLET to make it more accessible, use the "alt" attribute to briefly describe the action or purpose. Also, if it will help the audience to understand what the APPLET is meant to convey, include a more detailed description in the content of the APPLET element (i.e. between the <APPLET> and </APPLET> tags), e.g.

was the of il

If your browser supports APPLET, and if you have opted to let Java applets run on your system, then you will see some text randomly changing color and appearing in the APPLET window. If either condition is not met, you should see the following text:

If you were using a Java-enabled browser, you would see the text "It was the best of times, it was the worst of times..." dancing across the screen, instead of this paragraph.

Select this link to see the code that created the dancing text and its alternative.

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1f

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ASCII art

Avoid the use of ASCII art. Graphics and charts replace ASCII art.

Provide a description of the graphic or chart using the alt attribute.

Where brief descriptions are inadequate use a d-link solution along with the currently non-supported longdesc attribute.

```
<a href="chartdesc.htm"><IMG src="chart.gif"
longdesc="chartdesc.htm" alt="chart displaying dollar values over
time. For a detailed table of this information follow the d-
link">d</a>
```



Frames

```
<FRAME src="main.htm" longdesc="maindesc.htm"
title="Main content frame.">
```

Use the title to briefly describe the purpose of the frame. At the time use the future longdesc attribute to point to a file that will describe the complexity of the frames, their relationships and their functions.

```
<a href="maindesc.htm" alt="description of frames
relationships">d</a>
```

In the meantime, include a d-link to implement the future longdesc attribute

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...: WAI Web Content Accessibility Curriculum - slide 12.2 - Describe the purpose of frame Page 1 of 1

Example for Checkpoint

12.2 - Describe the purpose of frames and how frames relate to each other if it is not obvious by frame titles alone.

Example
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Priority 2

In the previous example, Checkpoint 12.1, we used the "title" attribute of the FRAME element to briefly explain the function of each frame. In some cases, you might feel that the purpose or content of your FRAME or FRAMESET may be too complicated to explain in just a few words. In those cases, we encourage you to use the "longdesc" attribute of the FRAME element to provide a link to a document that contains a complete description of the complex frame, or of the relationships between the various frames, e.g.:

```
<FRAME src="main.htm" longdesc="maindesc.htm" title="Main content
frame.">
```

The "longdesc" file for this particular FRAME design might look like this:

Page title,	Main navigation bar
Menu of links	Content frame: Main document display
Copyright,	Other navigation

There are four frames in this example. The frame along the top of the page is for the page title and primary navigation bar. The narrow frame (center, left) is to be used for the List of links. The largest frame (center, right) is where the content of the document chosen from the List of links will appear. The frame across the bottom of the page is for the copyright, secondary navigation and other constant

information.

To Checkpoints for Guideline 12.

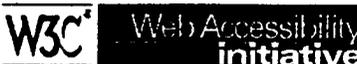
Next slide: Example for Checkpoint 12.3

Introduction Guidelines Checkpoints Examples



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Scripts

```
<SCRIPT type="text/javascript">
```

... script to display and replace each frame of a film strip as requested by a user click event on a button element.

```
</SCRIPT>
```

```
<NOSCRIPT>
```

First picture, pitcher is throwing the baseball

Second picture, the batter swings at the ball

Third picture, the left fieldman is seen missing the catch

Fourth picture, the basemen are seen advancing to third base.

Etc.

```
</NOSCRIPT>
```

Be certain to include noscript tags when using script tags.

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Example for Checkpoint 1.1h - a text equivalent for scripts.

Example
Slide 12 of 120



Priority 1

Use the NOSCRIPT element to describe the action or replace the functionality of any scripts you embed in your page.

For example, if you write a SCRIPT that animates a comic strip by presenting a new panel whenever the user mouse-clicks or presses a key, then use the NOSCRIPT element to provide a text alternative that describe the entire comic strip. For example:

```
<SCRIPT type="text/javascript">
... script to display and replace each frame of the comic strip as
requested by a user event ...
</SCRIPT>
```

```
<NOSCRIPT>
In the first panel, Lucy is holding the football. In the second
panel, Charlie Brown is seen charging towards the football. And so
on...
</NOSCRIPT>
```

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1i

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Images used as List Bullets

```
<IMG SRC="bullet.gif" ALT="Item: "> Crayon <BR>  
<IMG SRC="bullet.gif" ALT="*" "> Chalk <BR>  
<IMG SRC="bullet.gif" ALT=" " "> Colored Pencil <BR>
```

Item, * or a space make the most sense when it comes to indicating a bulleted item in a list

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... WAI Web Content Accessibility Curriculum - slide 1.11 - a text equivalent for images used as list bullets

Example for Checkpoint 1.11 - a text equivalent for images used as list bullets.

Example
Slide 13 of 120



Priority 1

Here is a simple unordered list that uses graphical bullets instead of the default bullets created by the element:

- Pencil
- Telephone
- Calendar

The example code shows three different but appropriate ways to use the alt parameter to label the bullet.

```
<IMG SRC="blueball.gif" ALT="Item: "> Pencil <BR>  
<IMG SRC="blueball.gif" ALT="*" "> Telephone <BR>  
<IMG SRC="blueball.gif" ALT=" " "> Calendar <BR>
```

- You might use "Item" or some other simple text to highlight the item, especially if there are not many entries in the list.
- You might use an asterisk "*" or a dash "-" to provide a common text alternative to a graphical bullet.
- If you have a large number of items in your list, then it might be appropriate to type a blank space between the quotation marks of the alt attribute. This would save the user of a screen reader from hearing "Item..." repeated time after time.

 To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1j

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Images used as “spacers”

```
<IMG src="space.gif" hspace=10 vspace=90 alt=" ">
```

Notice the space character between the quotations of the alt attribute. This eliminates confusion.

←

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Example for Checkpoint 1.1j - a text equivalent for images used as "spacers".

Example Slide 14 of 120



Priority 1

A layout trick used by many authors is to create a very small transparent image file and force white space between other objects by setting the required height and width or hspace and vspace attributes of the IMG element. The appropriate text equivalent for a "spacer" would be nothing at all, so:

```
<IMG src="spacer.gif" hspace=100 vspace=10 alt=" ">
```

Note that there is a blank space between the quotation marks in the alt-attribute. Of course, we would prefer you use style sheet markup to do your layout.

 To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1k

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Alternate Text (3/3)

- ◆ Sounds (played with or without user interaction)
- ◆ Stand-alone Audio files
- ◆ Audio tracks of Video
- ◆ Described Video.

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Sounds

```
<A HREF="multi/error.wav"><IMG SRC="img/submit.gif"  
ALT=" Submit Form" BORDER=0></A>
```

If you use sound to indicate that the user has not completed a task, then also indicate this with equivalent text.

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Example for Checkpoint 1.1k - a text equivalent for sounds (played with or without user interaction).

Example
Slide 15 of 120



Priority 1

You are a clever programmer. You have written a script that causes a warning sound, like a "Oh-oh!", to be played if the visitor to your page tries to submit a form before all the required fields have been completed.

If you are that clever, please give your program (or script) the ability to write a message to the screen that says something like:

"You have tried to submit an incomplete form. Please complete the required fields."

Access note: This example does not use a script or a form. We simulated what could be done with a script using simple HTML.

[To Checkpoints for Guideline 1.](#)

Next slide: Example for Checkpoint 1.1i

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Stand-alone Audio files

```
<A HREF="multi/work-e.wav"><IMG SRC="img/xi-audio.gif"
ALT="Sound file: Let's work together for accessibility."
border=0>.Listen to a message from the author. </A>
```

When the sound file contains short passages of text, the alt attribute would be sufficient. However, for long passages of text, a link to another file containing the transcript of the passage would be more appropriate using the longdesc attribute and the d-link solution.





Priority 1

If the sound file is very short, you could include the transcript in the alt-text of an image that accompanies the link to the sound file, e.g.

 Listen to a message from the author.

```
<A HREF="work-e.wav">  
<IMG SRC="audio.gif" ALT="Sound file: Let's work together for  
accessibility. ">  
Listen to a message from the author. </A>
```

If the audio file contains lots of information, then you might want to link to a file that contains a complete transcript:

Let's listen to an excerpt from "The Walrus and the Carpenter," by Lewis Carroll.

Audio transcript: Excerpt from "The Walrus and the Carpenter," by Lewis Carroll.

Man:
"The time has come," the Walrus said,
"To talk of many things:
Of shoes-- and ships-- and sealing-wax--
Of cabbages-- and kings--
And why the sea is boiling hot--
And whether pigs have wings."

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.1m



Audio tracks of Video

Include at least a **linked text file** including the transcript of the audio track.

Descriptions of the audio track describe the dialog of the audio. This information is included much the same way one would read a written movie script or Broadway play.





Priority 1

A text equivalent for the audio track of a video would be similar to the textual transcript of the spoken voices recorded in an audio file. This can be either a synchronized text equivalent (as described in Checkpoint 1.3) - the preferred method, or a simple text file, as shown here:

Man:
Go long, way out.

Professor:
Submitted for your consideration: the ball has been thrown, and you want to catch it. But how do you know where it will go so you can be there when it comes down?

One way is to use this formula.

It factors in velocity, acceleration and time to calculate the distance the ball will go. But then, you knew that. Your brain estimates all of these values in the first seconds of the ball's flight to calculate where you have to go to catch the ball.

This math equation helps us understand the physical world and how we function in it. Whether you do it on the board or on the field, they both work. So, next time you go out for that long pass, remember: Math is everywhere.

Math is everywhere!

See [QuickTime instructions](#) for the movie clip on which this transcript is based.

[To Checkpoints for Guideline 1.](#)

Next slide: Example for Checkpoint 1.1n

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Described Video

Include at least a **linked text file** including the transcript of the video track.

Descriptions of the video track describe the action of the visible movie. This information is included much the same way one would see the actions depicted in a written movie script or Broadway play.



Example for Checkpoint 1.1n - a text equivalent for video.

Example
Slide 18 of 120



Priority 1

A text equivalent for video would be a description of the scenes and actions that are taking place in the video - but not the spoken dialog. In this example, the description of what is happening in the video is interspersed with the text equivalent of the dialog. As in the previous example, the preferred method would be to integrate and synchronize the textual equivalent of the video in the movie clip itself.

Select this link for an [example of a transcript](#) of a QuickTime movie that includes complete captioning and video description.

See [QuickTime instructions](#) for the movie clip on which this transcript is based.

To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.2

[Introduction](#) | [Guidelines](#) | [Checkpoints](#) | [Examples](#)



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2. Meaning is Independent of Color

Web pages shall be designed so that all information required for navigation or meaning is not dependent on the ability to identify specific colors.

Example



Color Example

For more information, click the green smiley face.



This would be an inappropriate use of color. For those who do not see color, it may be difficult if not impossible to discern which is the green smiley face.

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Color Example 2

Although not directly addressed by the 13 rules, use of color in foreground and background colors should be chosen wisely.

High contrast in tones should be considered. Consider what one would see if the page were viewed without color. Would the user be able to read the page?



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Example for Checkpoint

Example
Slide 25 of 120



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

Priority 1



The first example uses color to highlight the preferred choice for those who can perceive it, and an ordered list to identify the preferred choice for people who cannot see colors.

Example 1: There are two ways to get things done around here. The second method, also shown in red, is preferred.

1. Your way.
2. My way.

Don't use color to convey information unless the information is also clear from the markup and/or text. Without color, the following example is meaningless. (This example is intentionally colorless to show the author that if the person visiting their page cannot see color, they will miss the point the author is trying to make.)

Example 2: There are two ways to get things done around here. The preferred method is shown in red.

- Your way.
- My way.

[To Checkpoints for Guideline 2.](#)

Next slide: Example for Checkpoint 2.2

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3. Language Identifiers

Changes in the natural language (e.g., English to French) of a document's text and any text equivalents shall be clearly identified.

- ◆ For short passages of different language within a page
- ◆ When the entire page is a different language

Short passage of Different Language

Father, he's saying "What our clients say...".

He's saying, "Was unsere Kunden sagen..."

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Example for Checkpoint

4.1 - Clearly identify changes in the natural language of a document's text and any text equivalents

Example
Slide 40 of 120



Priority 1

Use the "lang" attribute to clearly identify changes in the language of text.

When mixing languages in a sentence or paragraph, notate the language changes like this:

Mother, he's asking you to go.
He's saying, "Allons, Madame plaisante!"

And the code would be:

Mother, he's asking you to go.
He's saying, "Allons, Madame plaisante!"

For a complete list of language codes, check out:
[Code for the Representation of the Names of Languages](#). From ISO 639, revised 1989. Source: OASIS - the Organization for the Advancement of Structured Information Standards.

To Checkpoints for Guideline 4.

Next slide: Example for Checkpoint 4.2

[Introduction](#) | [Guidelines](#) | [Checkpoints](#) | [Examples](#)



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Entire Page is a Different Language

```
<HTML lang="it">
<HEAD></HEAD>
<BODY>
<P>Volete sapere l'origine della parola cappuccino,
il popolare caffelatte all'italiana?</P>
</BODY>
</HTML>
```

In this case the lang attribute is specified in the HTML tag

32



...: WAI Web Content Accessibility Curriculum - slide "4.3 - Identify the primary natural lan Page 1 of 1

Example for Checkpoint 4.3 - Identify the primary natural language of a document.

Example
Slide 42 of 120



Priority 3

The language of the entire document should be specified in the HTML tag. In this example, the primary language of the content is Italian.

```
<HTML lang="it">
<HEAD></HEAD>
<BODY>
<P>Volete sapere l'origine della parola cappuccino,
il popolare caffelatte all'italiana?</P>
</BODY>
</HTML>
```

In XML, use "xml:lang".

For a complete list of language codes, check out:
Code for the Representation of the Names of Languages. From ISO 639, revised 1989. Source: OASIS - the Organization for the Advancement of Structured Information Standards.

For information about content negotiation, see the example for Checkpoint 11.3.

To Checkpoints for Guideline 4.

Next slide: Example for Checkpoint 5.1

[Introduction](#) | [Guidelines](#) | [Checkpoints](#) | [Examples](#)



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4. Readable without Stylesheets

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

◆ Example (two slides)

Missing Stylesheet Example

```
<DIV class=part4>the lazy dog.</DIV>  
<DIV class=part1>The quick</DIV>  
<DIV class=part3>jumped over</DIV>  
<DIV class=part2>brown fox</DIV>
```

In this case, assuming that the stylesheet is missing or turned off, the logical sequencing of the text is unintelligible. It doesn't make sense.

Corrected Stylesheet Example

```
<DIV class=part1>The quick</DIV>  
<DIV class=part2>brown fox</DIV>  
<DIV class=part3>jumped over</DIV>  
<DIV class=part4>the lazy dog.</DIV>
```

In this case, assuming that the stylesheet is missing or turned off, the logical sequencing of the text is still readable. It makes sense even without the stylesheet.



Example
Slide 52 of 120



Example for Checkpoint

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

This styled text appears to be the same as in the previous example:

THE QUICK jumps over
brown fox
THE LAZY DOG

THE QUICK jumps over

brown fox

This example uses style attributes to specify the vertical as well as the horizontal positioning:

```
<STYLE TYPE="text/css">
<!--
.part1 /* the quick */ { color: red; font-size: 14pt;
padding-left: 0; margin-top: 40px;
font-family: copperplate gothic bold, fantasy, sans-serif }
.part2 /* brown fox */ { color: brown; font-size: 10pt;
padding-left: 100px; margin-top: 30px;
font-family: times new roman, deadmona, serif }
.part3 /* jumped over */ { color: purple; font-size: 18pt;
padding-left: 200px; margin-top: -60px;
font-family: deadmona, times new roman, serif }
.part4 /* the lazy dog */ { color: blue; font-size: 24pt;
padding-left: 350px;
margin-top: -100px; margin-bottom: 100px;
font-family: fantasy, copperplate gothic bold, sans-serif }
-->
</STYLE>
```

By letting the style commands lay out your text on the display, you can order the content logically in the HTML file, like this:

```
<DIV class=part1>The quick</DIV>
<DIV class=part2>brown fox</DIV>
<DIV class=part3>jumped over</DIV>
<DIV class=part4>the lazy dog.</DIV>
```

So, if style sheets were turned off or not supported in your browser, you would read:

The quick
brown fox
jumped over
the lazy dog

Example
Slide 52 of 120



Example for Checkpoint

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

This styled text appears to be the same as in the previous example:

THE QUICK jumps over
brown fox
THE LAZY DOG

THE QUICK jumps over

brown fox

This example uses style attributes to specify the vertical as well as the horizontal positioning:

```
<STYLE TYPE="text/css">
<!--
.part1 /* the quick */ { padding-left: 0;
color: red; font-size: 14pt;
font-family: copperplate gothic bold, fantasy, sans-serif }
.part2 /* brown fox */ {padding-left: 100px;
color: brown; font-size: 10pt;
font-family: times new roman, deadmona, serif }
.part3 /* jumped over */ { padding-left: 350px;
color: purple; font-size: 18pt;
font-family: deadmona, times new roman, serif }
.part4 /* the lazy dog */ { padding-left: 350px;
color: blue; font-size: 24pt;
font-family: fantasy, copperplate gothic bold, sans-serif }
-->
</STYLE>
```

Using the above style commands, you would have to order the text like this in your HTML:

```
<DIV class=part4>the lazy dog.</DIV>
<DIV class=part1>The quick</DIV>
<DIV class=part3>jumped over</DIV>
<DIV class=part2>brown fox</DIV>
```

So, if style sheets were turned off or not supported in your browser, you would read:

the lazy dog
The quick
jumped over
brown fox

5. Update Equivalents of Dynamic Content

Web pages shall update equivalents for dynamic content whenever the dynamic content changes.

- ◆ Image used in FRAMES (two slides)
- ◆ FRAMES and dynamic content created by SCRIPTS: (two slides)

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Image used in Frames

```
<FRAME name="picture_frame" src="home.html">
```

Insure that the contents of a frame are an html document as it should be, otherwise the alt text for images, Etc. is not possible.

```
<FRAME src="image-changer.html" title="picture of a house">
```

In this case, we assume the picture of the house changes dynamically therefore the title of the frame is inappropriate. A more appropriate title would be "changing picture from house to phone"

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Example for Checkpoint 6.2 - Ensure that equivalents for dynamic content are updated when the dynamic content changes.

Example
Slide 54 of 120

Priority 1

Always make the source of a frame an HTML document

Access note: This simple example uses a table and an image to simulate the look of a page created with FRAME markup.

	<p>menu</p> <pre><FRAME name="picture_frame" src="home.html"></pre> <p>where "home.html" should contain the following:</p> <pre></pre> <p>If you make the frame's source the image file itself:</p> <pre><FRAME name="picture_frame" src="home.gif"></pre> <p>then you can't provide a text equivalent for the image.</p>
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

To Checkpoints for Guideline 6.

Next slide: Example for Checkpoint 6.2 continues

Introduction Guidelines Checkpoints Examples



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http://www.w3.org/WAI/wcag-curric/sam54-0.htm

S/30/00

Example for Checkpoint 6.2, continued.

Example
Slide 55 of 120

Access note: This simple example uses a table and an animated image to simulate the look of a dynamic page created with FRAME markup.

	<p>menu</p> <pre><FRAME src="image-changer.html" title="picture of a house"></pre> <p>However, the title, 'picture of a house', would not be an appropriate title for the frame since the image changes from a house to a telephone and back.</p> <p>A more appropriate title would be 'changing picture frame'.</p> <p>This begs the question: how can you provide meaningful alt-text for random images dynamically served to a page? Can anyone suggest a suitable technique? Contact the authors with your suggestions.</p>
-----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

To Checkpoints for Guideline 6.

Next slide: Example for Checkpoint 6.3

Introduction Guidelines Checkpoints Examples



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S/30/00

Frames and dynamic content

```

<HTML>
<HEAD>
<TITLE>This is top.html</TITLE>
</HEAD>
<FRAMESET cols="50%, 50%" title="Our big document">
<FRAME src="main.html" title="Where the content is displayed">
<FRAME src="table_of_contents.html" title="Table of Contents">
</FRAMESET>
<A href="table_of_contents.html">Table of Contents.</A>
<!-- other navigational links that are available in main.html are available here also. -->
</NOFRAMES>
</FRAMESET>
</HTML>

```

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Example
Slide 99 of 120

Example for Checkpoint 6.5 - continued.

Example 2: in HTML, use NOSCRIPT with SCRIPT.

The following code would run a Tcl script in browsers that support that script language, while the content of the NOSCRIPT element would be displayed in browsers that do not support that script language.

```

<SCRIPT type="text/tcl">
..some Tcl script to show a billboard of sports scores...
</SCRIPT>
<NOSCRIPT>
<P>Results from yesterday's games:</P>
<DL>
<DT>Bulls 91, Sonics 80.
<DD><A href="bullsonic.html">Bulls vs. Sonics game highlights</A>
..more scores... </DL>
</NOSCRIPT>

```

Note: For some applications, server-side scripts may be more accessible than client-side scripts.

To Checkpoints for Guideline 6. Next slide: Example for Checkpoint 7.1

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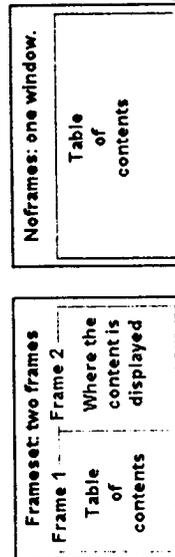
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Example
Slide 99 of 120

Example for Checkpoint 6.5 - Ensure that dynamic content is accessible or provide an alternative presentation of page.

Priority 2

Example 1: in HTML, use NOFRAMES at the end of each FRAMESET.



See the code that could generate both the frame and noframe versions of a page.

To Checkpoints for Guideline 6. Next slide: Example for Checkpoint 6.5 continues

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6. Redundant text links for Server-side Image Maps

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

Example

Example Redundant text links for Server-side Image Maps

```

<A HREF="img/imgmapsenses.map">
<IMG ISMAP SRC="imgmapsenses.gif"
ALT="Please use the following links instead of this imagema
</A><BR>
<A HREF="hearing.htm">Sense of Hearing Section</A> |
<A HREF="taste.htm">Sense of Taste Section</A> |
<A HREF="sight.htm">Sense of Vision Section</A> |
<A HREF="touch.htm">Sense of Touch Section</A> |
<A HREF="smell.htm">Sense of Smell Section </A> ]

```

Since the alt text is necessary for the server-side image map to convey the redundant links below the image, and the links below indicate their purpose, the content is clear.

40

Example for Checkpoint 1.2 - Provide redundant text links for each active region of a server-side image map.

Example Slide 19 of 120

Priority 1

Server-side image maps (those using the ISMAP attribute in the IMG element) usually don't or can't provide any textual information about the links that are coded into them. If your server-side image map has hot-links to sections A, B, C, D and E of your site, then provide a text alternative on the page. For example, the code:

```

<A HREF="img/imgmap1.map">
<IMG ISMAP SRC="imgmap1.gif"
ALT="Please use the following links instead of this imagemap."*
</A><BR>
[ <A HREF="a.htm">Section A</A> | <A HREF="b.htm">Section B</A> | <A
HREF="c.htm">Section C</A> | <A HREF="d.htm">Section D</A> | <A
HREF="e.htm">Section E</A> ]

```

produces the following server-side image map and text equivalent:



[Section A | Section B | Section C | Section D | Section E]

Note: the "alt" text you provide in the IMG element informs the users that a text equivalent exists -- but does not describe the image itself. If you want to describe the image map in detail, use "longdesc".

[] To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.3

Introduction Guidelines Checkpoints Examples



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7. Use Client-side Image Maps

Client-side image maps shall be used whenever possible in place of server-side image maps.

Example

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Example Preferred Client-side Image Maps

```
<IMG SRC="img/imgmap1.gif"
  ALT="Image map: please use the alternative links provided with the map."
  TITLE="Various icons relating to disability"
  USEMAP="#map1" BORDER=0>
<MAP NAME="map1">
  <AREA COORDS="0,0,39,39" HREF="a.htm"
    ALT="Link to section A of the site. ">
  <AREA COORDS="40,0,79,39" HREF="b.htm"
    ALT="Link to section B of the site. ">
  <AREA COORDS="80,0,120,39" HREF="c.htm"
    ALT="Link to section C of the site. ">
  <AREA COORDS="121,0,160,39" HREF="d.htm"
    ALT="Link to section D of the site. ">
</MAP>
```

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Example for Checkpoint 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.

Priority 1

The purpose of this checkpoint, in the context of device-independence, is to remind us that client-side image maps can (and must) use the alt attributes on the AREA elements to let the user know the purpose (destination) of each active area. Server-side image maps cannot, in most circumstances, provide the user with similar information. If you must use a server-side image map, you must provide an alternative way for users to navigate the links hidden in the image map.

Server-side image maps are still important for applications like geographical information systems and mapping applications where each point (coordinate pair) is active. Designing a client-side map with thousands of single pixel active regions would be very difficult.

To Checkpoints for Guideline 9.

Next slide: Example for Checkpoint 9.1 continues



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Example for Checkpoint 9.1, continued.

Another method of creating a client-side image map uses the <OBJECT>, <MAP> and <A> elements (although this method is not widely supported yet).



This code should expose the standard links if the user's browser does not support OBJECT or has turned off the loading of images:

```
<OBJECT data="imgmap4.gif" type="image/gif"
  usemap="#map1">
  <MAP name="map1">
    <P>Navigate the site. </P>
    <A href="a.htm" shape="rect"
      coords="0,0,39,39">[Section A]</A>
    <A href="b.htm" shape="rect"
      coords="40,0,79,39">[Section B]</A>
    <A href="c.htm" shape="rect"
      coords="80,0,120,39">[Section C]</A>
    <A href="d.htm" shape="rect"
      coords="121,0,160,39">[Section D]</A>
  </MAP>
</OBJECT>
```

See Checkpoint 1.2 for an example using a server-side image map and Checkpoint 1.5 for an example with a client-side image map.

To Checkpoints for Guideline 9.

Next slide: Example for Checkpoint 9.2



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initiative

8. Identify Rows and Columns in Data Tables

Data tables shall provide identification of row and column headers.

◆ Example (two slides)

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Example Rows and Columns

PRE

Do not use the pre tag, because it is difficult for assistive technology devices to read and make understandable.

TH, HEADER, SCOPE, COLGROUP

If you are using the table feature to provide layout for your document. TH, HEADER, SCOPE, and other special table tags should not be used. Future accessibility devices will use these special tags in specific ways to facilitate easy understanding of tables.

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Example for Checkpoint 5.1 - For data tables, identify row and column headers.

Example
Slide 43 of 120



Priority 1

This checkpoint is telling you that if you have a legitimate need to present data in a tabular format, then you should use the HTML TABLE element and its supporting elements and attributes (like TR, TD, TH and CAPTION). The alternatives (such as using the PRE tag for preformatted text or using style sheets) will actually make understanding of tabular data more difficult for users of assistive technology.

A simple data table created with proper data table mark up, might look like this:

Example of a simple data table created using HTML markup.

	Column 1 header	Column 2 header
Row 1 header	Column 1 Row 1	Column 2 Row 1
Row 2 header	Column 1 Row 2	Column 2 Row 2

See the code that created this table.

The above example is preferable to the using the <PRE> element to layout the data, because future browsers will use the TH and other TABLE markup to logically linearize tables.

Note: if you are using tables for page layout (instead of CSS), then you should NOT use markup reserved for data tables (like TH, HEADER, SCOPE, COLGROUP, etc.) because those elements will be used by some agents to identify and manipulate data).

Examples: WAI Web Content Accessibility Curriculum - slide "5.1, continued."

Page 1 of 1

Example for Checkpoint 5.1, continued.

Example
Slide 44 of 120



HTML 4.0 also allows you to explicitly link header information to columns and rows using the "headers" attribute of the <TD> and <TH> elements, e.g.:

Cups of coffee consumed by each senator

Name	Cups	Type of Coffee	Sugar?
T. Sexton	10	Espresso	No
J. Dinnen	5	Decaf	Yes

If you use the 'headers' attribute, a browser or screen reader might be able to expose or read the contents of the cells (if the user wishes) like this:

Name: T. Sexton, Cups: 10, Type: Espresso, Sugar: No
Name: J. Dinnen, Cups: 5, Type: Decaf, Sugar: Yes

because each datum is explicitly associated with its appropriate header.

View the markup code that would generate this example.

To Checkpoints for Guideline 5.

Next slide: Example for Checkpoint 5.2

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9. Associate data cells with header cells in multi-tier tables

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.

- ◆ Example (three slides)

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WAI Web Content Accessibility Curriculum - slide "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." Page 1 of 1

Example for Checkpoint

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.

Example
Slide 45 of 120



Priority 1

For "complex" tables, i.e. where tables have structural divisions beyond those implicit in the rows and columns, use appropriate markup to identify those divisions.

Example: A travel expenses worksheet. While the following data table appears simple enough visually, it would be difficult to understand if read by some of today's screen-readers. A good way to approximate what some screen-reader users will hear is to hold a ruler to the table, and read straight across the screen. Then, move the ruler down until the next line of characters is displayed. Read straight across. After a while, pick a data cell at random and, without looking at the column or row title, try and remember what headers describe that data point. The larger and more complex the table, the harder it would be to remember the row and column relationships.

Example 1: TRAVEL EXPENSES (actual cost, US\$)

TRIP, date	Meals	Room	Trans.	Total
San Jose				
25 Aug 97	37.74	112.00	45.00	
26 Aug 97	27.28	112.00	45.00	
Subtotal	65.02	224.00	90.00	379.02
Seattle				
27 Aug 97	96.25	109.00	36.00	
28 Aug 97	35.00	109.00	36.00	
Subtotal	131.25	218.00	72.00	421.25
Totals	196.27	442.00	162.00	800.27

PAGE 42

Example for Checkpoint 5.2, continued.

Example
Slide 46 of 120



Today, most users of screen-readers would hear this table read as:

TRAVEL EXPENSES (actual cost, US\$)
TRIP,
Meals Room Trans Total
date
San Jose
25 Aug 97 37.74 112.00 45.00
26 Aug 97 27.28 112.00 45.00
Subtotal 65.02 224.00 90.00 379.02
Seattle
27 Aug 97 96.25 109.00 36.00
28 Aug 97 35.00 109.00 36.00
Subtotal 131.25 218.00 72.00 421.25
Totals 196.27 442.00 162.00 800.27

Try reading this out loud to yourself and when you get to the 11th line, try to guess what the meaning of the fourth value is supposed to be... without looking back at the header information.

To Checkpoints for Guideline 5.

Next slide: Example for Checkpoint 5.2 continues

Introduction Guidelines Checkpoints Examples



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Examples: WAI Web Content Accessibility Curriculum - slide "5.2, continued."

Page 1 of 1

Example for Checkpoint 5.2, continued.

Example
Slide 47 of 120



Tomorrow's smart browsers or screen-readers will use additional HTML 4.0 markup (TBODY, THEAD, SCOPE, HEADERS, etc.) to "intelligently" decode a table for speech or alternative output. This table might be read as follows:

TRAVEL EXPENSES (actual cost, US\$)
Trip: San Jose, Date: 25 Aug 97, Meals: 37.74, Room: 112.00, Trans. 45.00
Trip: San Jose, Date: 26 Aug 97, Meals: 27.28, Room: 112.00, Trans. 45.00
Trip: San Jose, Subtotal, Meals: 65.02, Room: 224.00, Trans. 90.00, Total: 379.02
Trip: Seattle, Date: 27 Aug 97, Meals: 96.25, Room: 109.00, Trans. 36.00
Trip: Seattle, Date: 28 Aug 97, Meals: 35.00, Room: 109.00, Trans. 36.00
Trip: Seattle, Subtotal, Meals: 131.25, Room: 218.00, Trans. 72.00, Total: 421.25
Trip: Totals: Meals: 196.27, Room: 442.00, Trans: 162.00, Total: 800.27

View an example of the TABLE markup that would render the table both visually and provide the extra information needed to understand the information in different presentations.

To Checkpoints for Guideline 5.

Next slide: Example for Checkpoint 5.3

Introduction Guidelines Checkpoints Examples



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Introduction Guidelines Checkpoints Examples



10. Title all Frames

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

- ◆ Simple titles
- ◆ Complex Frameset descriptions

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Simple titles

```
<FRAMESET ROWS="20%,*,30%">  
<FRAME SRC="f1.htm" title="Title and main navigation  
bar frame">  
<FRAMESET COLS="20%,*, ">  
<FRAME SRC="f2.htm" title="Table of Contents frame">  
<FRAME SRC="f3.htm" title="Content viewing frame">  
</FRAMESET>  
<FRAME SRC="f4.htm" title="Copyright, acknowlegment  
and secondary navigation frame">  
</FRAMESET>
```

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Example for Checkpoint
12.1 - Title each frame to facilitate frame identification and navigation.

Slide 9

Example for Checkpoint
12.1 - Title each frame to facilitate frame identification and navigation.

Example
Slide 91 of
120

Priority 1

There are four frames in this example. The frame along the top of the page is for the page title and primary navigation bar. The narrow frame (center, left) is to be used for the Table of Contents. The largest frame (center, right) is where the content of the document chosen from the Table of Contents will appear. The frame across the bottom of the page is for the copyright, secondary navigation and other constant information. The code for the FRAMESET show the appropriate use of the title attribute.

```
<FRAMESET ROWS="20%,*,30%">
<FRAME SRC="f1.htm" title="Title and main navigation bar frame">
<FRAMESET COLS="20%,*,*">
<FRAME SRC="f2.htm" title="Table of Contents frame">
<FRAME SRC="f3.htm" title="Content viewing frame">
</FRAMESET>
<FRAME SRC="f4.htm" title="Copyright, acknowledgment and secondary navigation frame">
</FRAMESET>
```

Complex Frameset Descriptions

```
<FRAME src="main.htm" longdesc="maindesc.htm"
title="Main content frame.">
```

Again, provide a link to the file maindesc.htm in this example using a d-link as well as the longdesc attribute that will be supported in the future.

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Example for Checkpoint

12.2 - Describe the purpose of frames and how frames relate to each other if it is not obvious by frame titles alone.

Example
Slide 92 of 120



Priority 2

In the previous example, Checkpoint 12.1, we used the "title" attribute of the FRAME element to briefly explain the function of each frame. In some cases, you might feel that the purpose or content of your FRAME or FRAMESET may be too complicated to explain in just a few words. In those cases, we encourage you to use the "longdesc" attribute of the FRAME element to provide a link to a document that contains a complete description of the complex frame, or of the relationships between the various frames, e.g.:

```
<FRAME src="main.htm" longdesc="maindesc.htm" title="Main content
frame. ">
```

The "longdesc" file for this particular FRAME design might look like this:

Page title,	Main navigation bar
Menu of links	Content frame: Main document display
Copyright,	Other navigation

There are four frames in this example. The frame along the top of the page is for the page title and primary navigation bar. The narrow frame (center, left) is to be used for the List of links. The largest frame (center, right) is where the content of the document chosen from the List of links will appear. The frame across the bottom of the page is for the copyright, secondary navigation and other constant information.

To Checkpoints for Guideline 12.

Next slide: Example for Checkpoint 12.3



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11: Script Independent

Pages shall be usable when scripts, applets, or other programmatic objects are turned off or are not supported, or shall provide equivalent information on an alternative accessible page.

- ◆ When the user *doesn't* support scripts or plug-ins they must have an alternative.
- ◆ When the user *does* support scripts, they must be as accessible as possible.
- ◆ When the page serves a programmed application, the application must be accessible.

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User doesn't support scripts or plug-ins

Avoid using javascripts as the source of a hyperlink

Avoid using client-side scripting.

Server-side scripting is fine, it generates HTML that is pushed to the browser.

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Example for Checkpoint

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.

Example
Slide 56 of 120



Priority 1

Content developers must ensure that pages are accessible with scripts turned off or in browsers that don't support scripts.

- Avoid creating content on the fly locally (client-side). If a user's browser does not handle scripts, no content will be generated or displayed. However, this is different than displaying or hiding already existing content by using a combination of style sheets and scripting; if there is no script, then the content is always shown. This also does not rule out generating pages on the fly on the server-side and delivering them to the client.
- Avoid creating links that use "javascript" as the URI. If a user is not using scripts, then they won't be able to link since the browser can't create the link content. For example, do NOT do this:

```
<A href="javascript:">...</A>
```

Because this is a dead-end link for a user agent where scripts are not supported or not loaded.

To Checkpoints for Guideline 6.

Next slide: Example for Checkpoint 6.4

Introduction | **Guidelines** | **Checkpoints** | **Examples**



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User does support scripts

Use **NOSCRIPT** tags to include content otherwise included in the **SCRIPT** tags.

Use application-level event triggers rather than user interaction-level triggers such as "onfocus", "onblur", and "onselect".

Use logical rather than device-dependent events. If you must use device dependent events, then also include other methods for execution.

- Use "onmousedown" with "onkeydown".
- Use "onmouseup" with "onkeyup".
- Use "onclick" with "onkeypress".



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... WAI Web Content Accessibility Curriculum - slide "6.4 - For scripts and applets, ensure t Page 1 of 1

Example for Checkpoint 6.4 - For scripts and applets, ensure that event handlers are input device-independent.

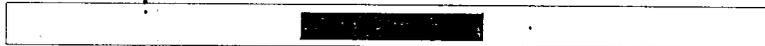
Example
Slide 57 of 120



Priority 2

To ensure people get the equivalent message on systems that don't support scripts and event-handlers, include some equivalent content in the <NOSCRIPT> element. As well ensure that the event-handlers you use are logical rather than device-dependent (See Checkpoint 9.3 for more about using event-handlers accessibly.)

The following example displays a **BUTTON**. The button is associated with a JavaScript **SCRIPT**. When the script is triggered by an **EVENT**, an **ALERT** window pops up on the screen of a graphical browser. The alert window contains a message for the user. In this case, the event is either the **TAB** key moving the focus to the button, or the user passing the mouse cursor over the button. The 'OnFocus' **EVENT-HANDLER** looks for the first type of event, while the 'OnMouseOver' event-handler looks for the second.



The script is followed by the **NOSCRIPT** element that contains the same message that would have appeared in the alert window. If **BUTTON** and **SCRIPT** (or the particular script-language) are not supported, a browser should display the content of **BUTTON** and the **NOSCRIPT** elements. In that case, you should see:

Win a prize!
You Win First Prize!

To see the markup for this example, please follow this link.

 To Checkpoints for Guideline 6.

Next slide: Example for Checkpoint 6.5



Page serves a programmed application

Refer to slide 65 in the curriculum for additional links

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...: WAI Web Content Accessibility Curriculum - slide "8.1 - Make programmatic elements s Page 1 of 1

Example for Checkpoint

8.1 - Make programmatic elements such as scripts and applets directly accessible or compatible with assistive technologies.

Example
Slide 65 of 120



Priority 1: if functionality is important and not presented elsewhere, and...

Priority 2: otherwise.

If an applet (created with either OBJECT or APPLET) requires user interaction (e.g., the ability to manipulate a physics experiment) that cannot be duplicated in an alternative format, make the applet directly accessible.

The accessibility of objects with their own interface is independent of the accessibility of the user agent. Accessibility must therefore be built into the objects or an alternative must be provided. If you are a programmer you should be aware of the resources available to help you ensure your programs are accessible.

For more information about accessible applets, please see:
Note: these links take you away from this presentation.

- [Java Accessibility – Trace R&D Center](#)
- [IBM Guidelines for Writing Accessible Applications Using 100% Pure Java – IBM Special Needs Systems](#)
- [Active Accessibility, Microsoft](#)
- [Advanced Microsoft Visual Basic 6.0, 2nd Edition](#), introduces developers to the use of VB 6.0 in writing applications for Active Accessibility

[To Checkpoints for Guideline 8.](#)

Next slide: Example for Checkpoint 9.1

[Introduction](#) | [Guidelines](#) | [Checkpoints](#) | [Examples](#)



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12. Synchronize multimedia equivalents

Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

Synchronization

A text transcript of audio material is required and when synchronized with the multimedia, is called “captioning”

A text or audio description of action and scenery in a video is required, and when synchronized with the multimedia, is called “video description”

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Synchronization

Multimedia clips are to be synchronized with captioning and video description whenever possible



**Without Captioning
and Video Description**



**With Captioning
and Video Description**

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Example for Checkpoint 1.4 - For any time-based multimedia presentation, synchronize equivalent alternatives with the presentation.

Example
Slide 22 of 120



Priority 1

A time-based presentation can include any form of multimedia, such as a movie, animation or slide show. Equivalent alternatives to these types of presentations are captions (which provide access to audio tracks) and audio descriptions (which provide access to visual tracks).

We have already explained the need to provide a textual transcript for any audio track (see Checkpoint example 1.1i) or video track (see Checkpoint example 1.1m), and a textual description of the video track (see Checkpoint examples 1.1n and 1.3). However, it must be admitted that a text transcript alone is not the ideal method for providing an equitable experience for persons with disabilities. It is widely accepted that on-screen captioning allows deaf and hard-of-hearing people to more fully appreciate the experience of a movie or multimedia production. An almost-equivalent accommodation for people with sight and hearing is the provision of subtitles during foreign-language films or performances. A separate textual transcript that must be read after the fact does not provide an equivalent experience.

Thus the requirement to synchronize the equivalent alternatives. The caption track is an alternative for deaf or hearing-impaired viewers. The audio-description track is an alternative for people who are blind or visually impaired. Synchronizing these alternatives with the main presentation (that is, the video and/or audio) means that nearly all users will get the best experience and the most information available to them. (Bear in mind that for people who do not have access to multimedia-playback devices, or for people who are deaf-blind, a transcript of both the audio and the audio descriptions is still the best alternative.)

Example for Checkpoint 1.4 - continued

Example
Slide 23 of 120



How do you ensure that your movies or multimedia meet this guideline?

1. In many cases multimedia projects are created for you by professional studios which already have (or ought to have) the ability to produce the accessible equivalents. When you contract for this type of work, include the accessible alternatives in your core requirements.
2. If you produce your own multimedia or movie clips, it is likely that you already have the tools on hand to build in your own accessible equivalents. Many standard sound, movie, animation packages (including those from Apple's QuickTime or RealNetworks) can be used to create accessible formats.

At present there are three formats or languages that support the ability to synchronize equivalent alternatives. These are Apple's QuickTime, the W3C's SMIL (Synchronized Multimedia Integration Language) and Microsoft's SAMI. You will need different software to play the different formats, so check the [multimedia software page](#) to download what's appropriate. From the [multimedia software page](#), we provide links to examples that demonstrate the synchronization of equivalent alternatives.

 [To Checkpoints for Guideline 1.](#)

Next slide: Example for Checkpoint 1.5

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Text transcript

If synchronization is not possible, then provide a link to the full **transcript** of the text dialog (**captioning**) and the text description of the action (**video description**)

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Example for Checkpoint 1.11 - a text equivalent for stand-alone audio files.

Example
Slide 16 of 120



Priority 1

If the sound file is very short, you could include the transcript in the alt-text of an image that accompanies the link to the sound file, e.g.

 Listen to a message from the author.

```
<A HREF="work-e.wav">  
<IMG SRC="audio.gif" ALT="Sound file: Let's work together for  
accessibility. ">  
Listen to a message from the author. </A>
```

If the audio file contains lots of information, then you might want to link to a file that contains a complete transcript:

Let's listen to an excerpt from "The Walrus and the Carpenter," by Lewis Carroll.

Audio transcript: Excerpt from "The Walrus and the Carpenter," by Lewis Carroll.

Man:
"The time has come," the Walrus said,
"To talk of many things:
Of shoes-- and ships-- and sealing-wax--
Of cabbages-- and kings--
And why the sea is boiling hot--
And whether pigs have wings."

 To Checkpoints for Guideline 1.

Next slide: Example for Checkpoint 1.11m

Text or audio description



Captioning and Video Description
in English or German

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Example for Checkpoint 1.1n - a text equivalent for video.

Example
Slide 18 of 120



Priority 1

A text equivalent for video would be a description of the scenes and actions that are taking place in the video - but not the spoken dialog. In this example, the description of what is happening in the video is interspersed with the text equivalent of the dialog. As in the previous example, the preferred method would be to integrate and synchronize the textual equivalent of the video in the movie clip itself.

Select this link for [an example of a transcript of a QuickTime movie that includes complete captioning and video description.](#)

See [QuickTime instructions](#) for the movie clip on which this transcript is based.

 [To Checkpoints for Guideline 1.](#)

Next slide: Example for Checkpoint 1.2

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13. Skip Repetitive Links

An appropriate method shall be used to facilitate the easy tracking of page content that provides users of assistive technology the option to skip repetitive navigation links.

◆ Example (three slides)

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Example Repetitive Links

D-Link

```
<a href="AlternateContent.htm" alt="Link to Alternate Content"><SPAN id=hidden>d</SPAN></a>
```

A convention understood by those using assistive technologies is the use of d-links.

D-links are nothing more than the letter d used in an anchor tag where the d has been hidden through the use of stylesheets. Using it in this manner allows the user of assistive technologies to have at their disposal a method to obtain alternate means to access content while those who do not use assistive technologies are not inundated with d's all over the page. This currently is a substitution for the longdesc attribute that will be supported in the future.

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Example for Checkpoint 13.6 - Group related links, identify the group (for user agents) and, until user agents do so, provide a way to bypass the group.

Example
Slide 104 of 120



Priority 3

Users who are blind often jump from link to link when skimming a page or looking for information. When they do this, the "link text" (text between the <A> and) is read. A navigation bar is often the first thing encountered on a page. For speech output users, this usually means having to hear a large number of similar links read on every page before they arrive at the unique content.

However when links are grouped into logical sets, such as in a navigation bar, they may be dealt with as a unit rather than as several pieces. Thus, you can precede the grouped items with a link that will skip over the set and allow the user to start reading at the beginning of the main body of the page. This is similar to how people with vision skip reading the links when they see the same set on each page.

Example 1: a text link appearing before the navigation bar:

Skip over these navigation links.

Note: these links don't go anywhere.

Contact Us	Help	Home	Search
What's New	Directory	Programs	Publications

This line is the target of the link and would mark the start of the text following the navigation bar.

examples: WAI Web Content Accessibility Curriculum - slide 13.6, continued

Page 1 of 1

Example for Checkpoint 13.6, continued

Example
Slide 105 of 120



The Guidelines and User Agent Working Groups will soon recommend a "standard" way to use markup to identify groups of related links. Once a method is found, developers of user agents will be able to create browsers that automatically recognize the groups and give the user the option of skipping (or hiding) the links or presenting them normally. One such method is to package related links within the MAP element. Note that links within the MAP element do not have to be image maps (which is what most of us use MAP for).

Navigate the site.
[[Section A](#) | [Section B](#) | [Section C](#) | [Section D](#)]

The code that produces the above group of links is:

```
<MAP name="map2">  
Navigate the site.<BR>  
[ <A href="a.htm">Section A</A> |  
<A href="b.htm">Section B</A> |  
<A href="c.htm">Section C</A> |  
<A href="d.htm">Section D</A> ]  
</MAP>
```

To Checkpoints for Guideline 13.

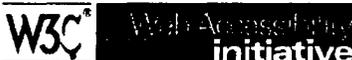
Next slide: Example for Checkpoint 13.6 continues

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Example for Checkpoint 13.6, continued.

Example
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In HTML, the DIV, and FRAME elements could also be used to group links. Since these HTML 4.0 elements can take the "id" and "class" attributes, the grouping could be identified using one or more of those attributes with a descriptive name. However, unless a standard method of grouping and identifying links is agreed upon, then User Agents will have difficulty catching and rendering that information.

(See [Example for checkpoint 9.5 - keyboard alternatives](#) and [Example for checkpoint 13.10 - skipping ASCII art](#) for other examples of grouping and bypassing related elements.

 To Checkpoints for Guideline 13

Next slide: Example for Checkpoint 13.7

Introduction | **Guidelines** | **Checkpoints** | **Examples**



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W3C Curriculum

- ◆ Self-paced format
- ◆ Cite location at
<http://www.w3.org/WAI/wcag-curric>
- ◆ Four Sections
 - General Introduction
 - Guidelines
 - Checkpoints
 - Examples

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Mnemonic

Accessibility **C**orrections
Leverage **S**urfing
Diversity **S**upporting
Client **T**echnologies
Consistently **F**or **P**recise
Meaningful **R**eadability

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Thirteen Key Words with Mnemonic

Accessibility	Alt – Text
Corrections	Color
Leverage	Language
Surfing	Stylesheets
Diversity	Dynamic Content Update
Supporting	Server-Side Image Maps
Client	Client-Side Image Maps
Technologies	Tables
Consistently	Cells
For	Frame
Precise	Plug-ins
Meaningful	Multimedia
Readability	Repetitive Links

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Site Validation

- ◆ Various tools are available to check your site
- ◆ Go to CITA Home Page at
 - www.itpolicy.gsa.gov/cita
 - Click on “Tools to make your Webpages Accessible”
 - Click on “Enter Your Site Info to Check your Page”

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Review (1/2)

1. Provide Alternate Text
2. Meaning must be independent of color
3. Identify language changes
4. Style sheet independent
5. Update equivalents for dynamic content
6. Redundant text links for server-side image maps
7. Use client-side image maps whenever possible
8. Row and Column Headers in Data Tables
9. Data cells must be associated with header cells
10. Title all frames
11. Script independent
12. Synchronize multimedia equivalents
13. Provide option to skip repetitive links

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Review (2/2)

- ◆ Printed Resources
- ◆ Web Resources

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**GSA Office of Governmentwide Policy
Center for Information Technology Accommodation**

A Short List of References for Accessible Web Site Design

- More information about these and further resources are available from the Center for Information Technology Accommodation (CITA) Web site: <http://www.itpolicy.gsa.gov/cita>. The primary resource for the GSA Web design training classes is the Curriculum for Web Content Accessibility Guidelines 1.0, which is listed below under W3C resources.

Government Resources

- SECTION 508: The Notice of Proposed Rule Making for Electronic and Information Technology Accessibility Standards
<http://www.access-board.gov/sec508/nprm.htm>
- Center for IT Accommodation (GSA Office of Governmentwide Policy), including Tools To Make Your Web Page Accessible (Check Your Page)
<http://www.itpolicy.gsa.gov/cita>
- Federal Information Technology Accessibility Initiative
<http://www.section508.gov>

World Wide Web Consortium (W3C) Resources

- Curriculum for Web Content Accessibility Guidelines 1.0
<http://www.w3.org/WAI/wcag-curric>
- Web Content Accessibility Guidelines 1.0 (plus Techniques and Errata)
<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/>
- How People with Disabilities Use the Web: DRAFT NOTE
<http://www.w3.org/WAI/EO/Drafts/profiles-19990930.html>
- Web Content Accessibility Guidelines Impact Matrix: DRAFT NOTE
<http://www.w3.org/WAI/GL/NOTE-WCAG-impact-matrix-19990810>
- User Agent Support for Accessibility
<http://www.w3.org/WAI/Resources/WAI-UA-Support>
- Web Style Sheets
<http://www.w3.org/Style/>
- HTML Validation Service
<http://validator.w3.org/>

Other Resources

- Adobe PDF: Accessibility Information
<http://access.adobe.com>
- Java™ Accessibility and Usability Work
<http://trace.wisc.edu/world/java/java.htm>
- Universal Design
<http://trace.wisc.edu/>
- Browsers, Screen Readers, and Other Methods of Access
<http://www.w3.org/WAI/References/Browsing>

**Designing Accessible Web Pages
Forum Feedback
FAX to 202.501.6269**

Location: _____

Please Provide **Name and Email** Address for future updates:

Name _____ Email: _____

Organizational Relationship: Circle one

Government

Industry

Media

Consultant

How did you first hear of this forum: _____

If Email - which list - from where ?

Rate the overall Forum (1-5) (relative to others and your expectations)

Poor 1 2 3 4 5 Excellent

Rate the content

Poor 1 2 3 4 5 Excellent

Rate the trainers and delivery

Poor 1 2 3 4 5 Excellent

What was the best aspect of this forum? _____

What aspect could be improved ? _____

Other Comments
