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Accessibility Training:

Introduction to Accessibility and Section 508

Agenda

- Why Accessibility is Important
- Section 508
- Accessibility Issues
- Types of Content
- The Future of 508
- Resources
- Questions

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Why Accessibility is Important

Why is Accessibility Important?

- Worldwide…
  - 285 million people with some sort of visual impairment
  - 275 million people with moderate-to-profound hearing impairment
  - Many more have physical, speech, cognitive, and neurological disabilities or a limited understanding of English.
- Accessibility ensures *all users* can access the product or service, regardless of their capabilities.

Accessible Design Benefits Everyone

- Most of us encounter accessibility features originally created for people with disabilities on a daily basis.
- Each of these turns out to have applications that also make things easier for people without disabilities.
- Examples include the following:
  - Closed captions for the deaf on television programs
  - Curb cutouts and ramps for wheelchair users
  - “Talking books” for the blind

What is Assistive Technology?

- Assistive Technology (AT) is any item, piece of equipment, or system that is commonly used to increase, maintain, or improve functional capabilities of individuals with disabilities.

Some AT devices are well-known:

- Eyeglasses
- Hearing aids
- Canes
- Wheelchairs

AT software includes the following:

- Text-to-speech converters
- Screen magnifiers
- On-screen keyboards
- Speech-to-text converters

- AT relies on proper use of the delivery format.

Why is Accessibility Important to Me?

- Electronic content produced at HHS must be made accessible to all users regardless of disability.
- Electronic content includes:
  - Electronic documents
  - Web sites and pages
  - Applications
  - Multimedia
  - Agency-wide emails
- Before the content can be made public, it must be accessible per section 508.

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Section 508

What is Section 508?

- Section 508 is part of a 1998 amendment to the Rehabilitation Act of 1973.
- It requires all Federal electronic content to be accessible.
- The U.S. Access Board is an independent Federal agency which develops and maintains standards that must be met to achieve 508 compliance.
- The most applicable standards for electronic content are:
  - 1194.21 Software applications and operating systems
  - 1194.22 Web-based intranet and internet information and applications
  - 1194.24 Video and multimedia products
- HHS reviews are directly based on these standards.

Examples of Standards

- When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually [1194.21(a)].
- Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup [1194.22(c)].
- All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned [1194.24(c)].

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Accessibility Issues

What Can Create an Accessibility Problem?

When the ASPA 508 Team does a review, they pay particular attention to:

- Images
- Captions
- Color
- Data Tables
- Dynamic Content/Interactivity
- Forms
- Navigational Elements/Links

What is Electronic Content?

- Electronic content, or “information and communication technology” (ICT) is the message (information) you are trying to get across (communicate).
- Modern technology allows us to separate the content from the “presentation” (how it looks, or how it is conveyed).
- Content alone can be inaccessible no matter what the presentation, or delivery format.
- Section 508 says you have to choose a presentation so the content is accessible to everyone.

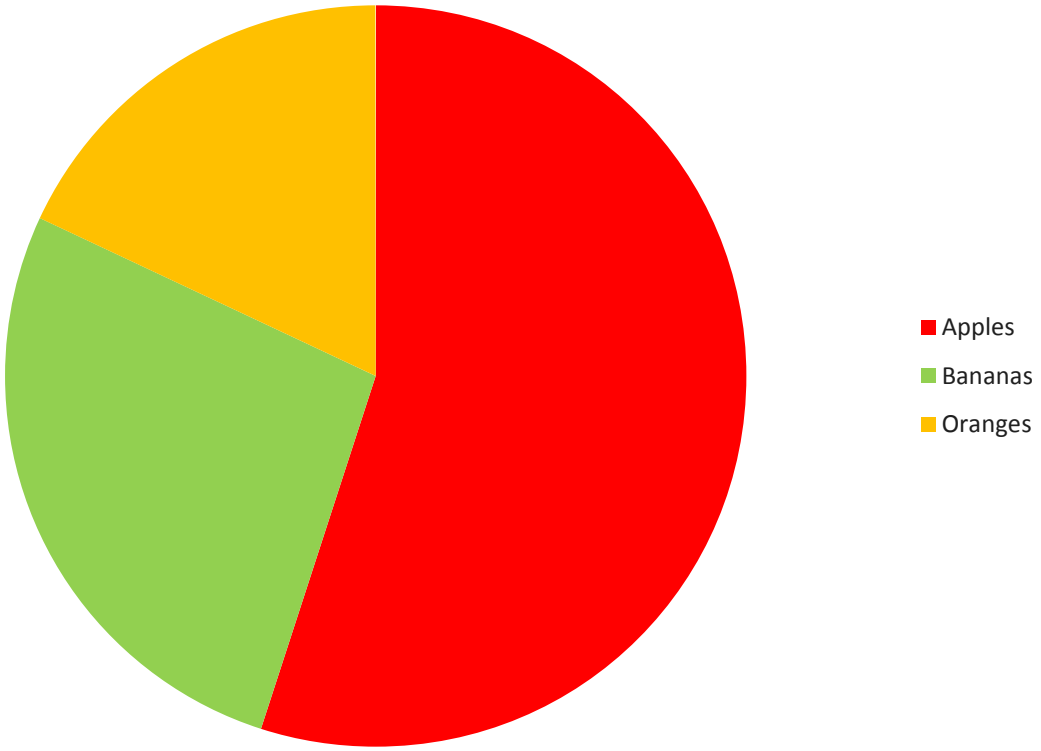
Using Electronic Content

- When using content that is not your own, don't assume it's accessible.
- Creating complex content can cause problems for developers and thus delays in publishing.
- It is much easier to create content that is accessible in the first place (*bake it in*), than to remediate content after the fact (*bolt it on*).

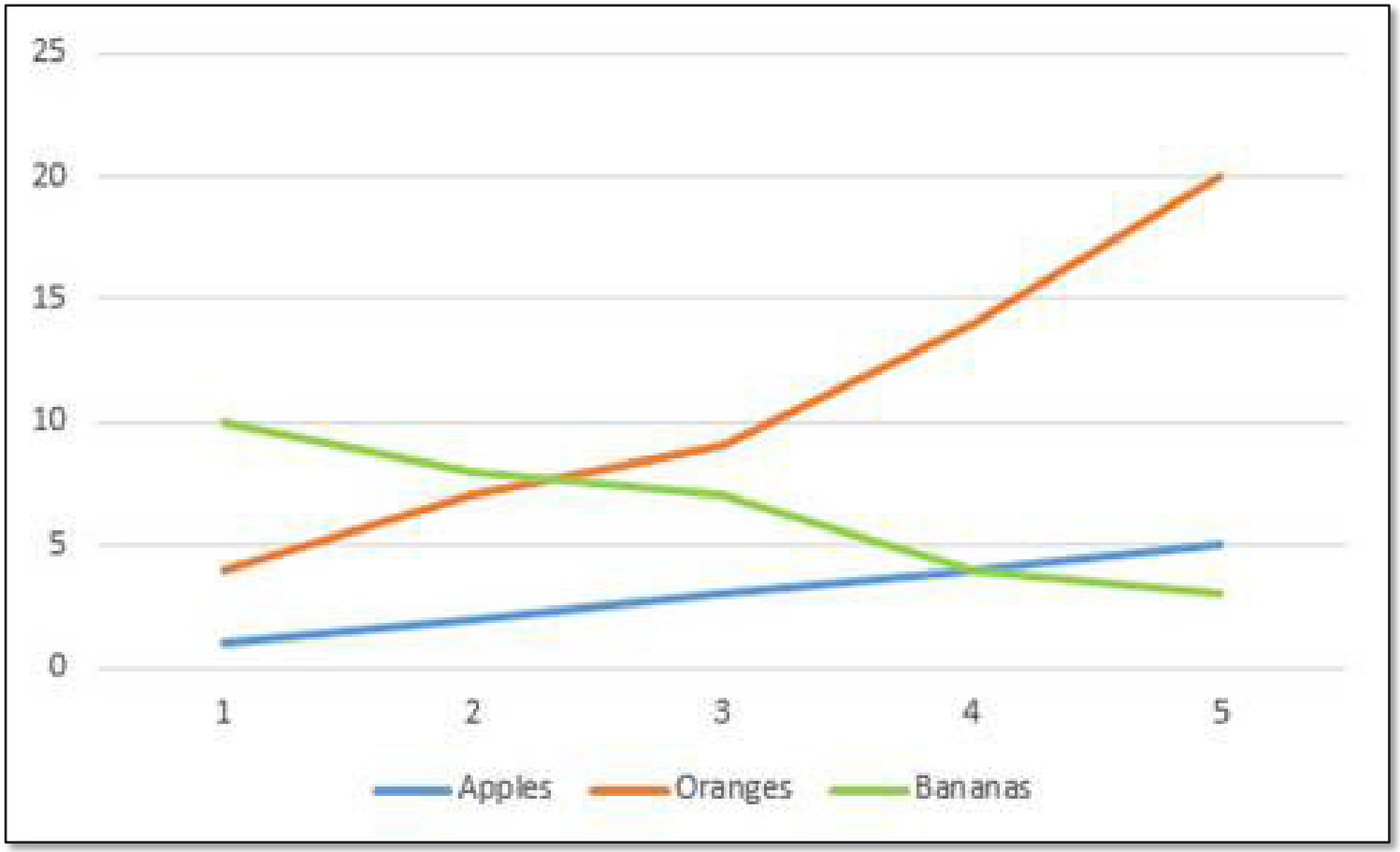
Scenario 1

- You’re tasked with designing illustrations to aid in understanding certain trends.
- You create a pie chart and a line graph and submit the designs.

Pie Chart



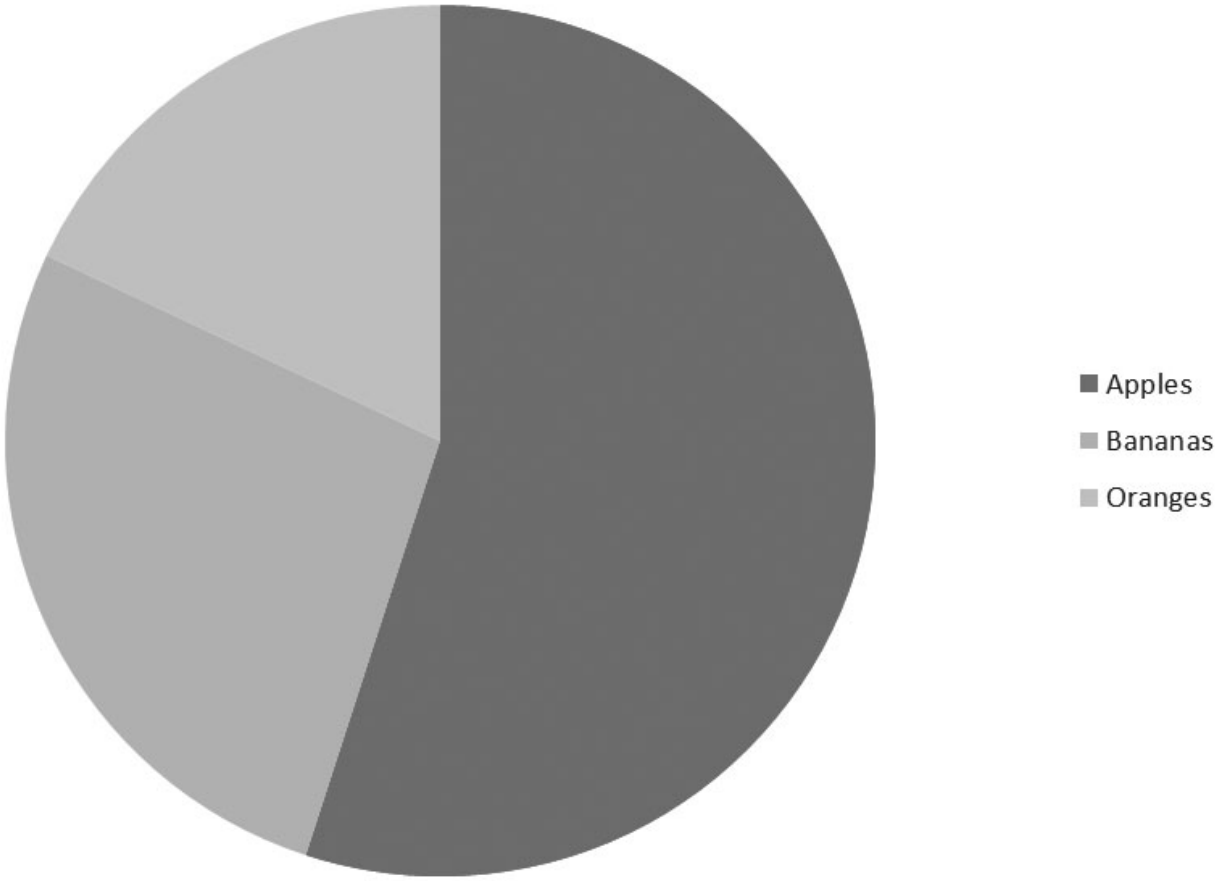
Line Graph



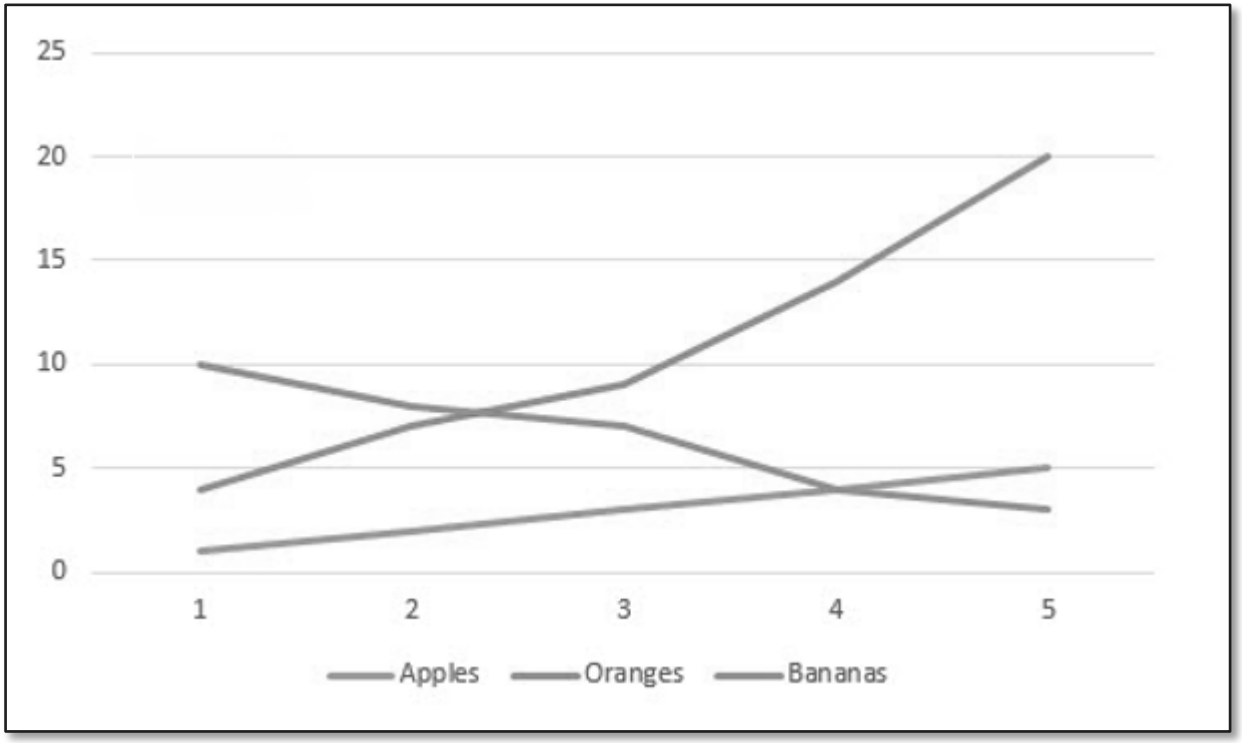
Result 1

- Your designs are rejected!
- They were sent to a test group for feedback, and there was a colorblind user who could not relate the legend to the charts.

Colorblind View of Pie Chart



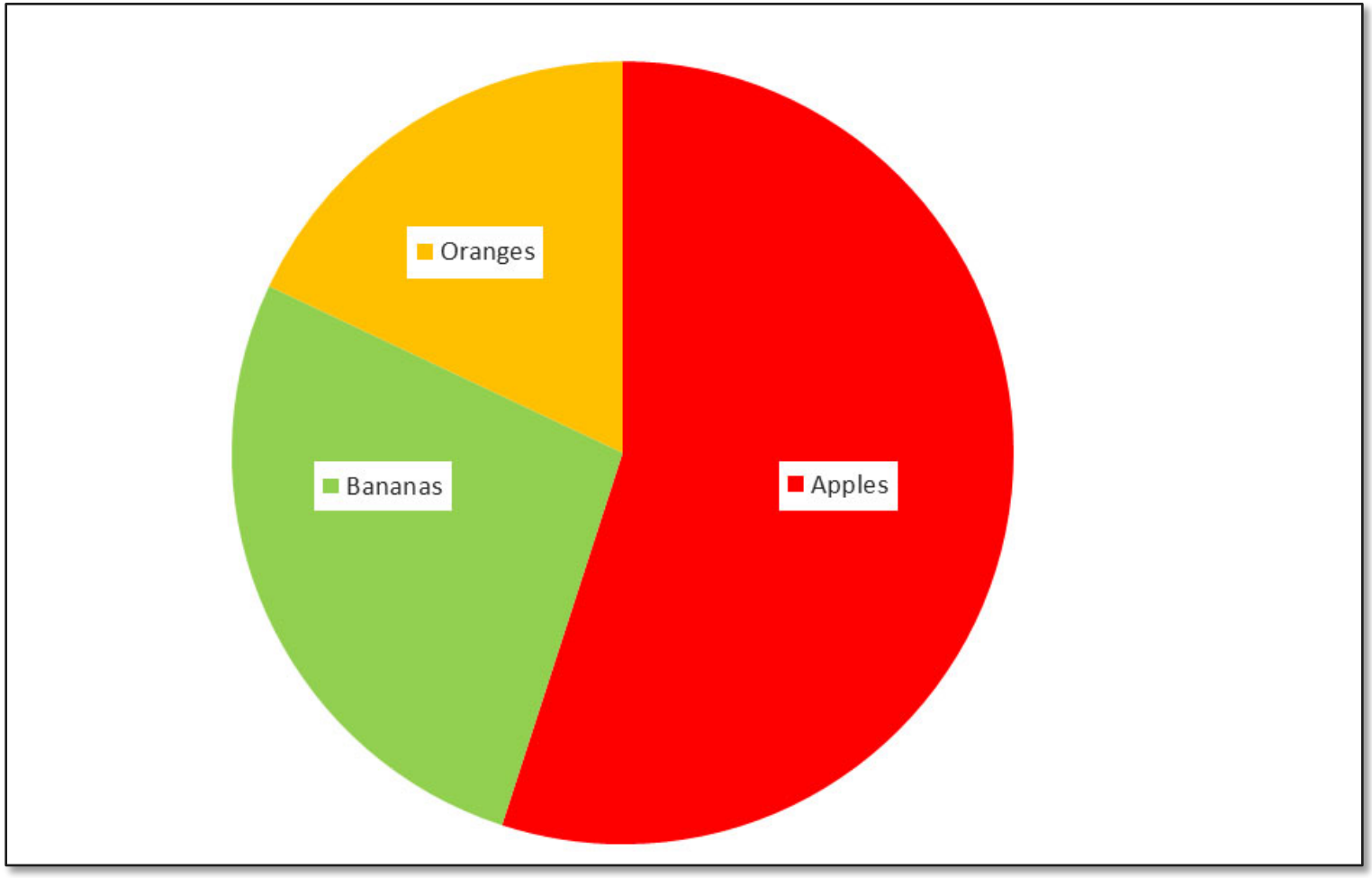
Colorblind View of Line Graph



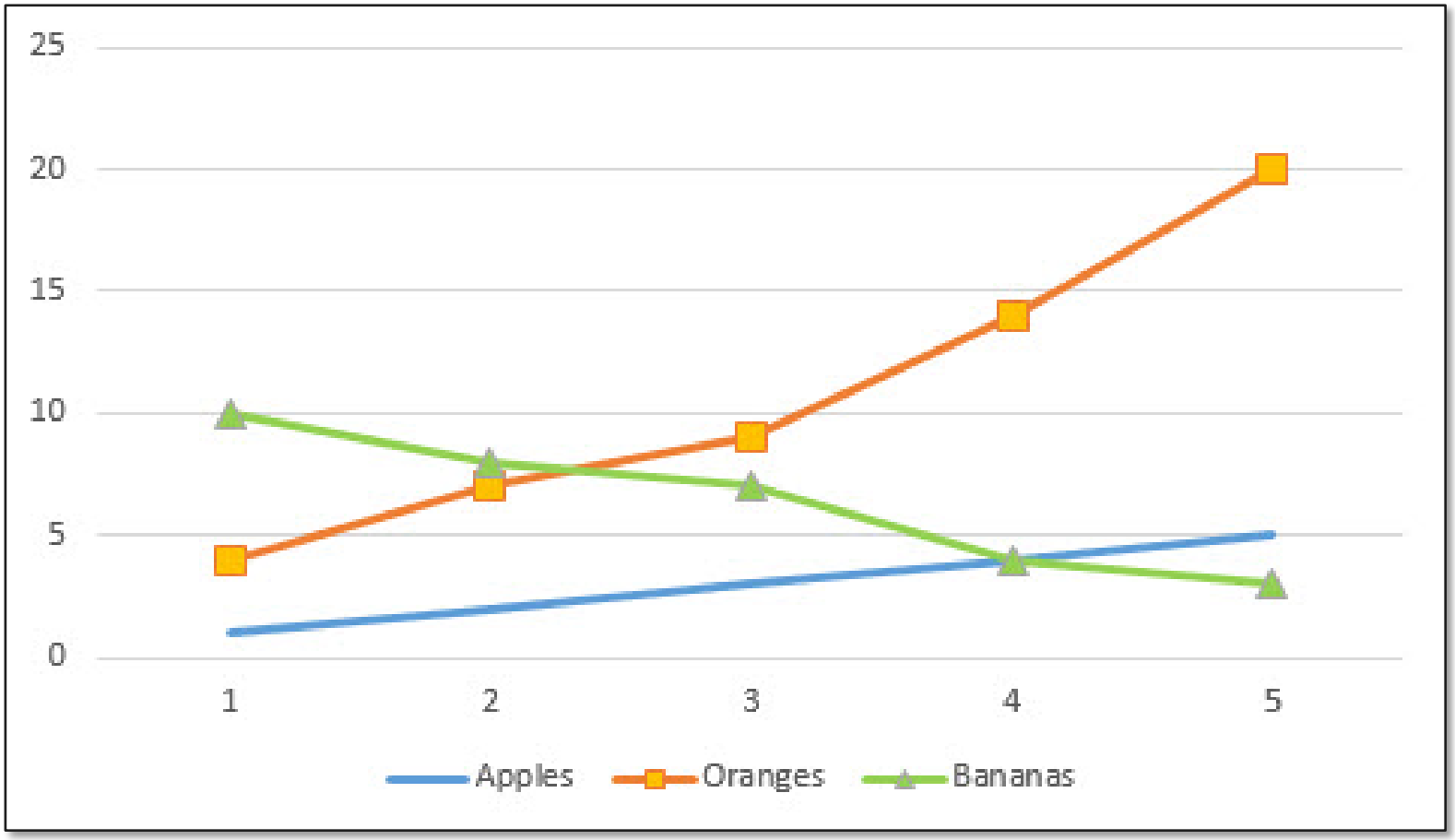
Second Attempt

- After reading up on 1194.22(c), you realize you can’t convey information with color alone.

Accessible Pie Chart



Accessible Line Graph



Scenario 2

- You're assigned to create a document to be posted first thing in the morning.
- After review, you're asked to add a table which summarizes important data.
- You find a table on the web that works perfectly!... So you put a screenshot of it in the document.
- You send it to Janet, a new coworker, who was hired to convert Word documents to PDF for posting.

A Complex Table

Employees		Founded
Men	Women	
ACME Inc.		
2000		1947
1400	600	
XYZ Corp		
1000		2011
600	400	
123 Medical		
1150		1973
750	400	

Result 2

- The next day you find a disheveled Janet giving you a mean look and ask her “what’s wrong?”
- She replies she was up all night making that PDF 508 compliant.
  - “I had to retype the table because it was an image, and spent hours making the proper associations for the header cells.”
  - “And no, the table on the site that you found wasn’t accessible either.”

Simplified Table

Company	Male Employees	Female Employees	Total Employees	Year Founded
Acme Inc.	1400	600	2000	1947
XYZ Corp	600	400	1000	2011
123 Medical	750	400	1150	1973

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Types of Content

Web Content

- All functionality must be operable by keyboard.
- Valid HTML is key to making web sites accessible.
- Pay special attention to the following elements:
  - Images
  - Forms
  - Data Tables
  - Frames
  - Navigational Elements
  - Dynamic Content/Interactivity

How Web Sites are Tested for Section 508

- Site-wide scanning tools
  - Accenture Digital Diagnostic Engine (ADDE)
- Web page evaluation tools
  - WAVE
  - Developer Toolbars
- Standard specific tools
  - Color Contrast Analyzer
- Manual inspection
  - View Source
  - Keyboard Evaluation
- AT evaluation
  - Screen readers (JAWS, NVDA, Window Eyes)
  - Voice recognition (Dragon, Siri)

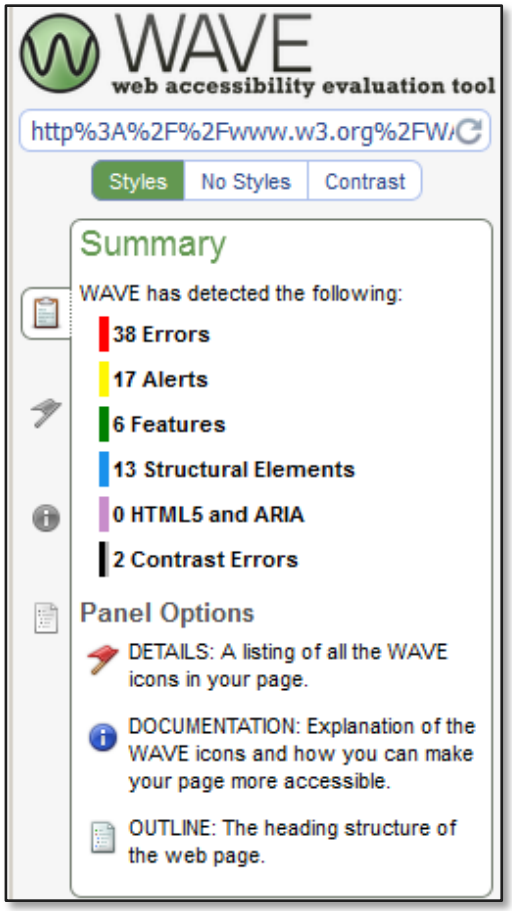
Scenario 3

- You're a developer asked to redesign a small web site to increase traffic.
- No problem, you know all the latest tricks to make an eye catching site and a few cool 3rd party widgets could bring in some views!
- Working diligently for 2 weeks, you submit the design to your manager for a first look.

Result 3

- “Back to the drawing board” says your manager.
- “I, personally, love the new site but I ran a WAVE check on the homepage and no way will this pass a 508 review.”

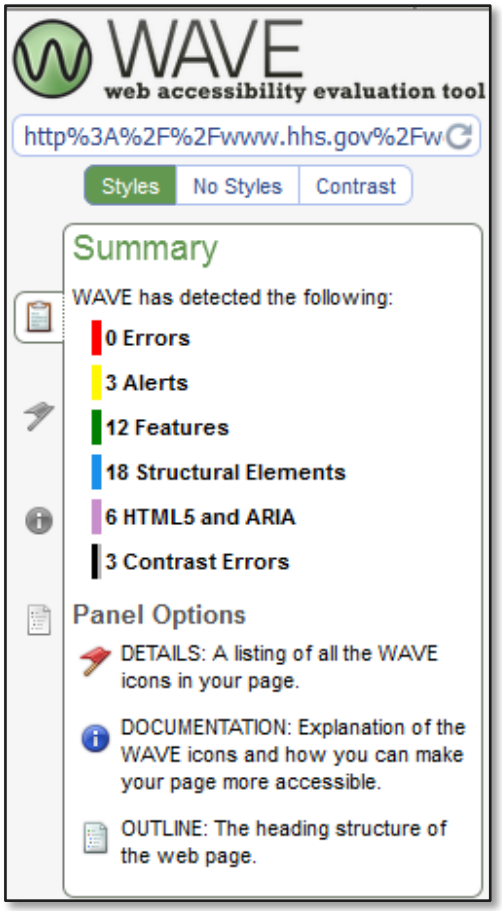
WAVE Accessibility Check



Remediated Design

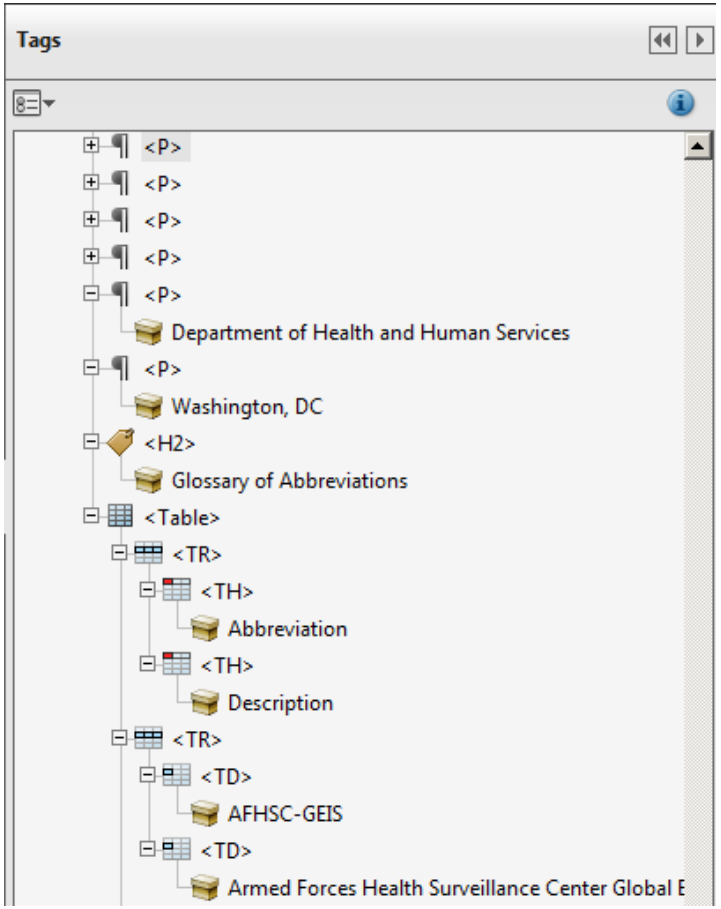
- After taking our training on *Identifying Accessibility Errors in Web Sites*, you try again.
- This time you get a clean report.
- As a bonus, the site is even easier to use!

WAVE Check on Remediated Design



PDF

- Accessible PDFs contain a back end tag structure similar to HTML so content can be correctly interpreted by AT.
- Tagging a PDF can be tedious and requires Acrobat Pro or expensive third-party software.
- Having a well-structured source file does NOT necessarily translate into an accessible PDF, but does save time when tagging it.



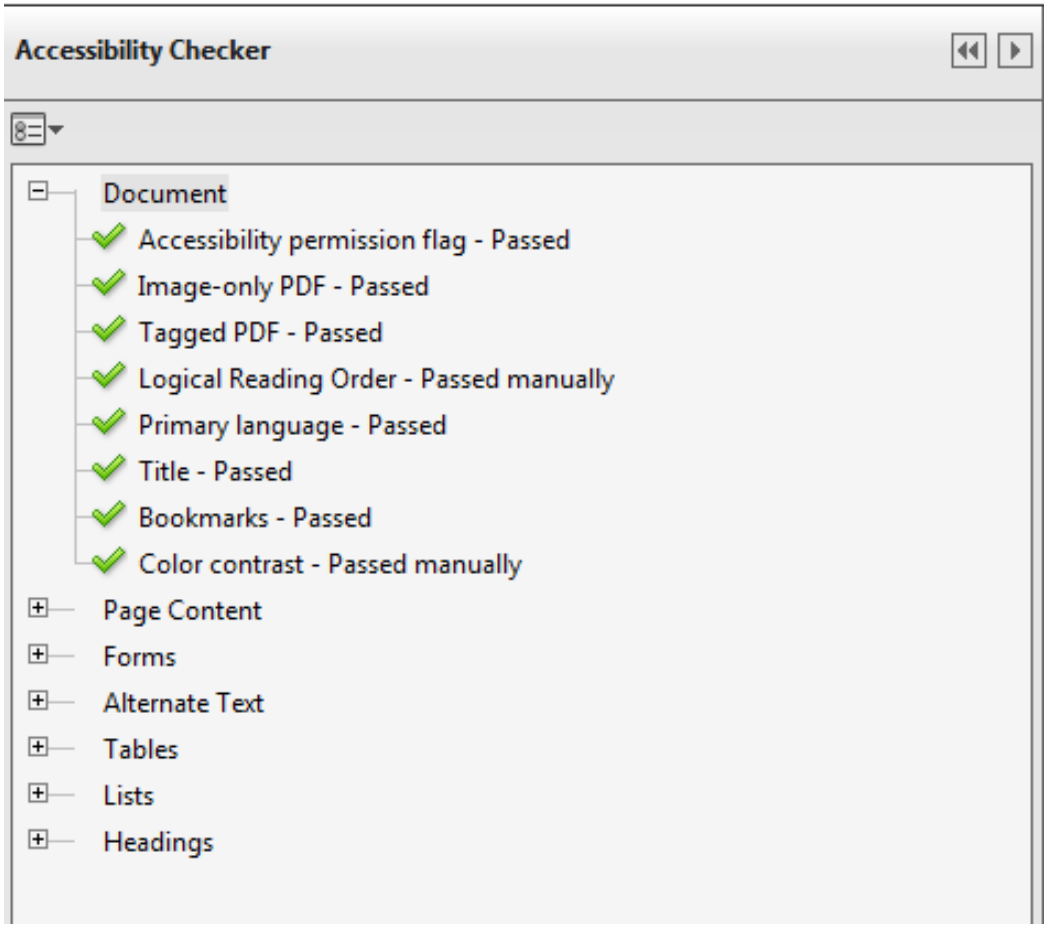
How PDFs are Tested

- Acrobat Pro contains a built in Accessibility Checker, but a clean report does not always mean a compliant document.
- Standard specific tools
  - Color Contrast Analyzer
  - Adobe LiveCycle for forms
- Manual Inspection
  - View tags
  - Touch Up Reading Order tool
- AT evaluation
  - Screen Readers

Scenario 4

- You're asked to post a PDF on suicide prevention.
- Having heard about 508, you ask your contractor if the document is compliant.
- "Of course!" they say, just run the accessibility checker.
- Double checking to be sure….

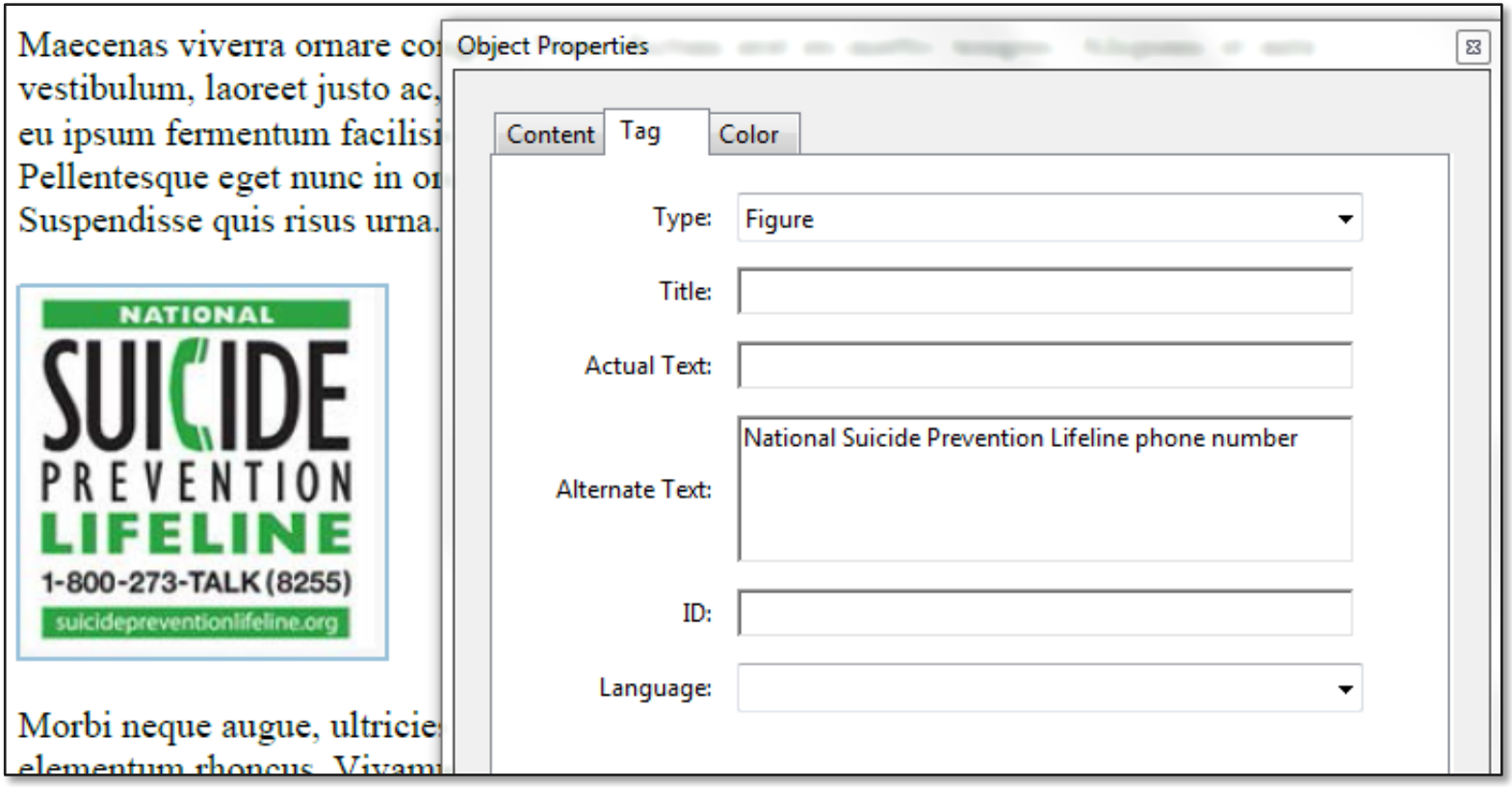
Clean Accessibility Report



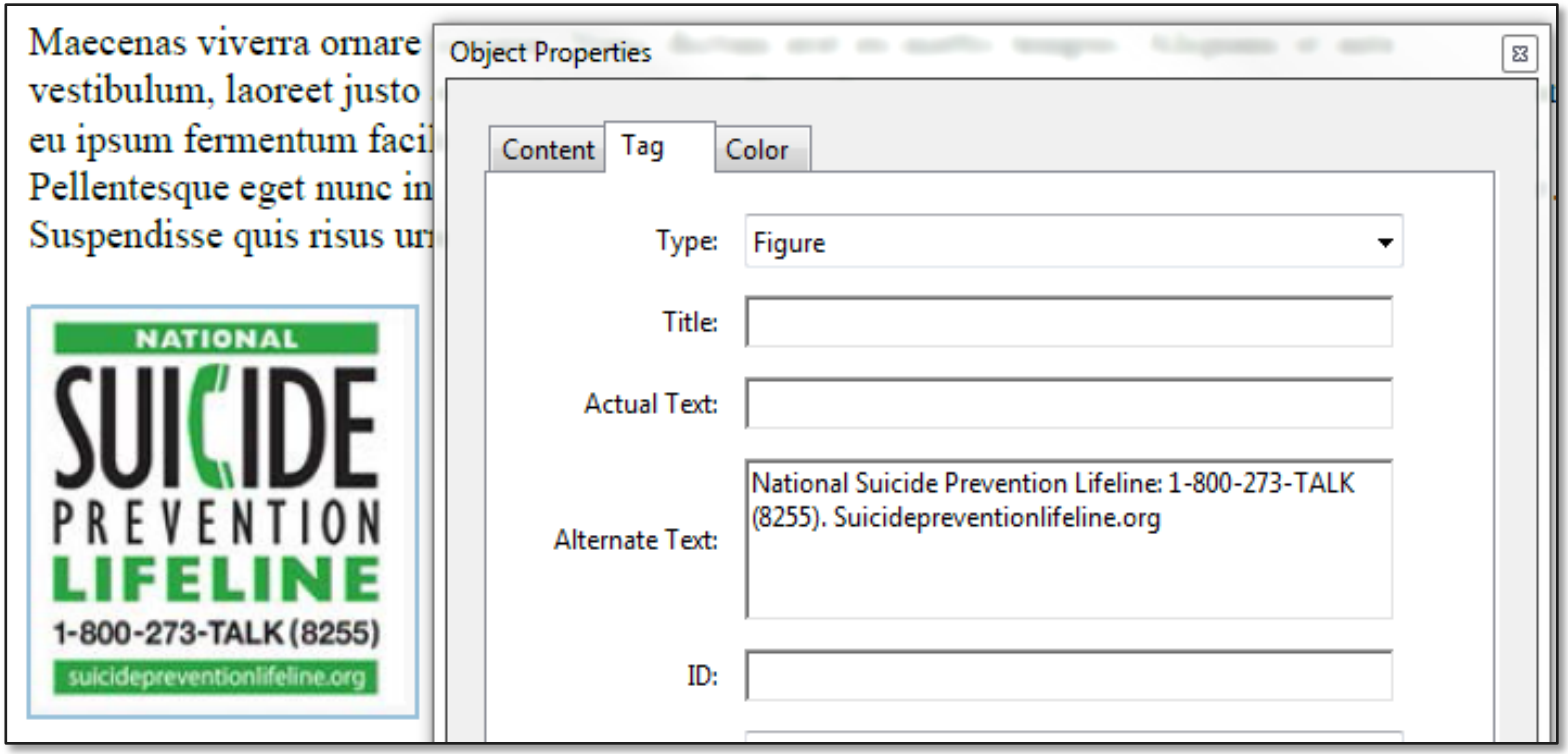
Result 4

- A week later you're informed that the PDF has a received a lengthy complaint regarding an image and the user is threatening legal action.
- You're confused because you made a point to double check!! What image are they talking about??
- The complaint included a screenshot….

Problematic Image



Remediated Image



MS Office documents

- Accessible documents use Built-in styles
- Certain elements can’t be made accessible in Office
  - Complex tables
  - Forms
  - Hidden decorative content
- PDF/HTML is the preferred format in every case
- Accessible office files tend to convert to PDF/HTML more smoothly

How Office Files are Tested

- Office 2010 and later contains a built-in Accessibility Checker, but a clean report does not always mean an accessible document, and *vice versa.*
- Standard specific tools
  - Color Contrast Analyzer
- Manual Inspection
  - Style Inspector
  - Accessibility/Productivity ribbon
  - Alt text
- AT evaluation
  - Screen readers

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The Future of Section 508

Overview

- The Access Board is in the process of updating the standards to include more specific guidelines.
- Web Content Accessibility Guidelines (WCAG 2.0) from the World Wide Web Consortium (W3C) will be “incorporated by reference.”

Planning Ahead

- Existing standards are all that's currently required to be Section 508 compliant.
- However, WCAG 2.0 should be considered now.
- There is no indication of anything being grandfathered in.
- HHS already requires one WCAG 2.0 guideline which is not referenced in current Section 508 standards.

Example of WCAG 2.0 Criterion / Sufficient Technique

- 1.4.3 Contrast (Minimum): The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following: (Level AA)
  - Large Text
  - Decorative Text
  - Logos

Scenario 5

- You're asked to send an email to promote a conference your office is hosting.
- Your team lead wants the message to be colorful so it's not dull.
- The event is in February and there is a chance of snow so you want to make sure to include the make up date.
- You complete the task and send the email.

Email Body

Come one come all!

We're happy to be hosting what we hope to be an annual conference next Thursday @ 2pm.

Where do you need to be? Main building, 5th floor conference room (543A)

Hope to see you there!

Makeup date in case of snow is the following Tuesday, same time

Result 5

- It snowed and the office was closed, but the event was able to take place on the make up date.
- A week later, 2 people email your office wondering if the conference will have a make up date. They are told the makeup date was in the email.
- They have low vision and were not able to see the last line of text due to insufficient color contrast.
- Next time you'll know to use the Color Contrast Analyzer.

Remediated Email Body

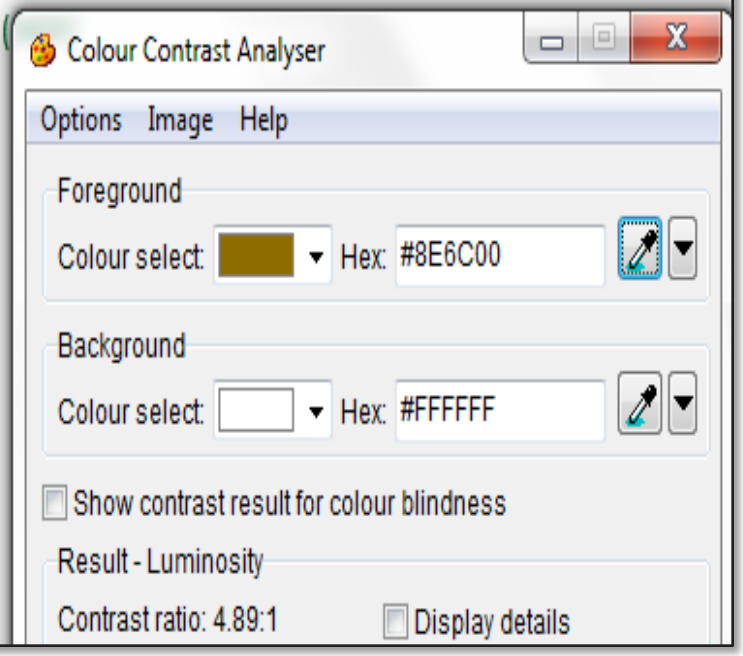
Come one come all!

We're happy to be hosting what we hope to be an annual conference next Thursday @ 2pm.

Where do you need to be? Main building, 5th floor conference room (

Hope to see you there!

Makeup date in case of snow is the following Tuesday, same time



Resources

Additional Trainings

- A listing of current ASPA DCD trainings can be found at http://www.hhs.gov/web/section-508/training-in-508/
- Pick the appropriate training and contact your ASPA Digital Communication Division Contact

HHS Resources

HHS has several resources to help designers, developers, and authors comply with Section 508:

- HHS Web Policies & Standards - http://www.hhs.gov/web/policies/index.html
    - Web Policies
    - Web Standards and Usability Guidelines
- HHS.gov Section 508 - http://www.hhs.gov/web/508/index.html
    - Common Issues to Avoid
    - Tips, Checklists, and Tutorials

Other Government Resources

- Section508.gov - http://www.section508.gov/
- United States Access Board - http://www.access-board.gov/508.htm
    - Current Standards and progress on updating them, including “About the ICT Refresh” at http://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-ict-refresh
- GSA 508 Tutorials, Guidance, Checklists - http://www.gsa.gov/portal/content/103565
    - Guidance to Creating Accessible Documents
    - Resources for Making Websites 508 Compliant
    - "How To" Guidance
- http://www.socialsecurity.gov/accessibility/files/SSA_Alternative_Text_Guide.pdf

Non-Governmental Resources

- How to Meet WCAG 2.0 - http://www.w3.org/WAI/WCAG20/quickref/Overview.php
- WebAIM: Web Accessibility in Mind - http://webaim.org/
- Colorblind Web Page Filter - http://colorfilter.wickline.org/
- Color Contrast Analyzer - http://www.paciellogroup.com/resources/contrast-analyser.html
- CommonLook by NetCentric Technologies - http://www.commonlook.com/

Our Job at HHS

- At HHS, our mission is to help the disabled. As a result, **mere compliance is not enough**. Our Web pages should be accessible to the greatest possible extent, so our stakeholders can live dignified, fulfilling, productive lives.

"The moral test of government is how it treats those who are in the dawn of life, the children; those who are in the twilight of life, the aged; and those in the shadows of life, the sick, the needy and the handicapped."

-Hubert H. Humphrey at the dedication of the Hubert H. Humphrey building; November 4, 1977.

Questions