

# Access for All

Day 2: Web and Information Technology  
Accessibility



# Please Don't Be Quiet

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- Ask questions
- Make comments
- Start with introductions...

# Topics for Today

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- General Introductions
- Introduction to technology accessibility
  - Concepts
  - Techniques
  - Statutes
- Pieces of the accessibility pie
  - What makes content accessible?
- Basic accessibility testing
- Basic multimedia accessibility

# Workforce OK Employment and Training Association



# INTRODUCTIONS

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Oklahoma ABLE Tech and DRS  
Partnership: Access in the Workforce



# Oklahoma ABLE Tech

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- Oklahoma's Assistive Technology Act Program
  - Assistive Technology
  - Accessible Technology
  - Workforce Accessibility
  - Training, technical assistance
- Partner with Oklahoma Department of Rehabilitation Services (DRS)
- Training and technical assistance
- More information on the ABLE Tech Workforce for All site:
  - <http://weba.im/76p>



# TECHNOLOGY ACCESSIBILITY

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What is it? Why do we need to worry about it?

- October is National Disability Employment Awareness Month!



Expect. Employ. Empower.

# Where Technology Accessibility Fits

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- Education and training
- Job coaching, resources
- Job search
- Application, interview, offer, acceptance, benefits, termination
- How do you use technology to serve job seekers?

# Workforce Utilization

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- Age 18-64
  - 34.4% of people with disabilities are employed.
  - 75.1% of people without disabilities are employed.
    - <http://weba.im/6tq>

# Median Income

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- Median earnings, age 16 and up
  - People with disabilities: \$20,341
  - People without disabilities: \$27,590
    - \$7,249 disparity
    - <http://weba.im/6tr>

# Poverty in Oklahoma

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- Age 18-64
  - People with disabilities, 89,715 or 28.8 %
    - <http://weba.im/6ts>
  - People without disabilities, 274,868 or 14.2%
    - <http://weba.im/6tt>

# POUR, as per The W3C

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- Perceivable
  - Users must be able to perceive the information being presented
- Operable
  - Users must be able to operate the interface
- Understandable
  - Users must be able to understand the information as well as the operation of the user interface
- Robust
  - Users must be able to access the content as technologies advance

# In Other Words...

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- Meet people where they are online.
- Free digital information for use by the broadest audience.
- Intentionally include more people.
- Take responsibility for our digital material.

# Three Important Pieces

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- Universal access
- Fair and equal
- Technology compatibility

- Let more people use digital stuff.
- Don't discriminate.



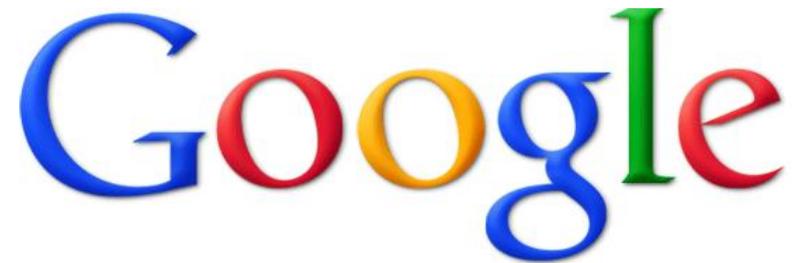
# Universal Access

# Fair and Equal Availability

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- Make the experience as equivalent as possible regardless of what we cannot control.
  - Computer type
  - Tablet size
  - Phone operating system
  - Disability
    - Vision
    - Hearing
    - Motor
    - Cognitive

- Make content understandable to technology.
  - Searches
  - Assistive technology (AT)

The Google logo is displayed in its characteristic multi-colored font, with each letter in a different color: G (blue), o (red), o (yellow), g (blue), l (green), e (red).

# Technology and Technology

# Opportunities for Job Seekers

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- Technology opens doors, unless we add barriers
- Learning
- Training

# DISABILITY AND INTERACTIONS WITH TECHNOLOGY

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A Few Things that Make the Web More  
Accessible

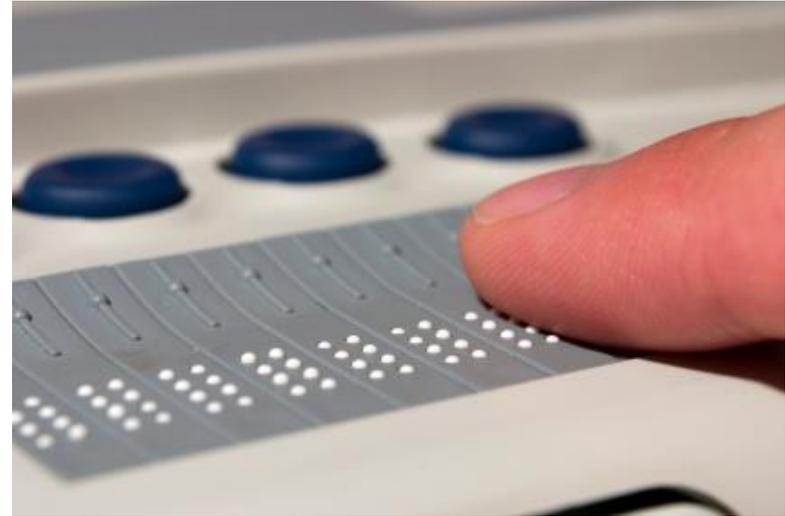


# Vision

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- Color blindness
- Low vision
- Total blindness
- Recovering from Lasik
- Using smartphone or tablet outside. In July. At noon.
- Stuck with black and white due to no color ink in the printer

- Glasses
- Operating system zoom features
- Screen reading software
- Braille readers

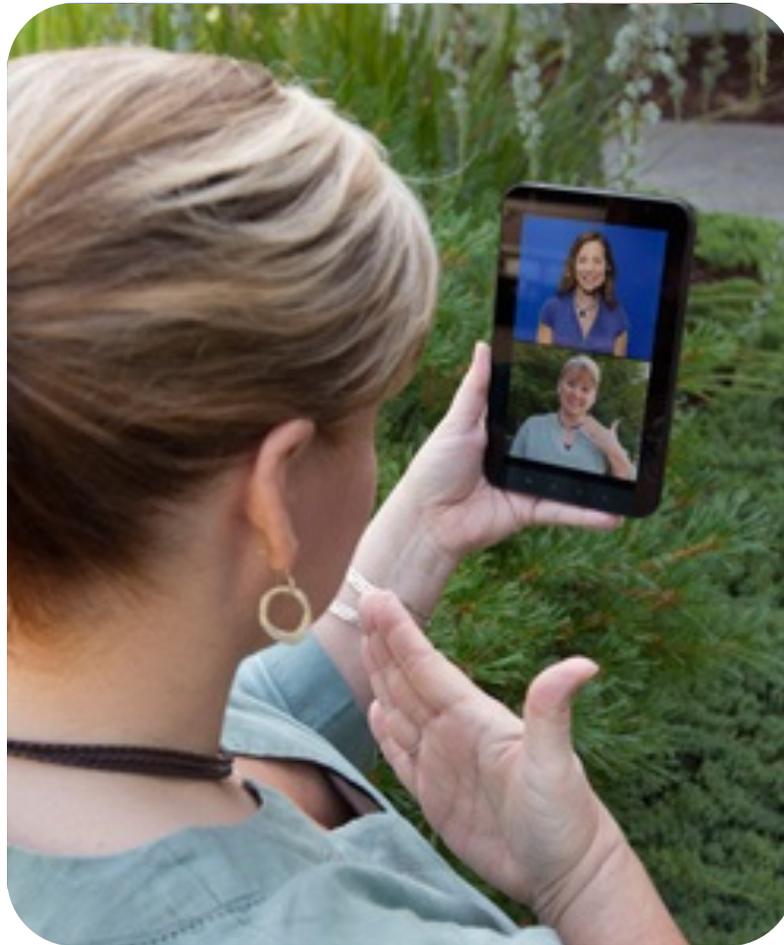


# Assistive Technology: Vision

# Hearing

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- Partial hearing loss
- Total hearing loss
- Loud room
- Bad acoustics
- Forgot earbuds



# Mainstream AT

# Mobility

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- Limited dexterity
- Hemiplegia
- Quadriplegia
- Broken dominant hand



# Assistive Technologies: Mobility

# Cognitive

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- Attention Deficit Hyperactivity Disorder
- Traumatic Brain Injury
- Dyslexia
- Booking a flight at 9:00 PM on Friday night after a long week

# LAWS AND SUCH

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Where We Are, Where We're Going

# Statute

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- Federal
  - The Americans with Disabilities Act (ADA)
  - Rehabilitation Act
    - Section 503
    - Section 504
    - Section 508
- State
  - Oklahoma's Electronic and Information Technology Accessibility (EITA) Law

# Americans with Disabilities Act

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- Title I
  - Employment
- Title II
  - Access to public sector programs
- Title III
  - Access to private sector programs

# Key Concepts From the ADA

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- Effective communication
- Services, programs, and activities
- Qualified person with a disability

# The ADA does...

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- Protect all phases of employment
- Protect access to the services and activities provided by the state and municipal governments
- Protect access to the services and activities provided by “places of public accommodation”
- Include technology as used to provide any of the above
- Create an environment where people with disabilities are guaranteed the same opportunities

# The ADA does not...

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- Create an unfair advantage in any phase of employment
- Create unfair access to the services and activities provided by the state and municipal governments
- Create unfair access to the services and activities provided by “places of public accommodation”
- Specify standards to use when evaluating technology accessibility
- Create an environment where people with disabilities are guaranteed positive outcomes

# Rehabilitation Act

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- Pre-dates the ADA
- Section 503
  - Employment
- Section 504
  - Programmatic Access
- Section 508
  - ICT Accessibility in procurement
  - Based on older standards

# Electronic and Information Technology Accessibility

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- Oklahoma's Accessibility Statute
- Echoes Section 508 standards
- Broadly applicable to agencies and institutions

# What Do Standards Do?

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- Give everyone a target
  - Assistive technology vendors
  - Software vendors
  - Content authors
  - Operating system creators
  - Browser developers

# EITA Section 3.5

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- Equivalent Facilitation
- “Nothing in these standards is intended to prevent the use of designs or technologies as alternatives to those prescribed in these standards provided they result in substantially equivalent or greater access to and use of a product for people with disabilities.”
- “...technologies may be developed or used in ways not envisioned by the technical provisions of this document but still result in the same or better functional access.”

# EITA Technical Assistance Document

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- Find it at [http://www.ok.gov/accessibility/Technical\\_Assistance\\_Document.html](http://www.ok.gov/accessibility/Technical_Assistance_Document.html)
- Answers Why? and How?

# Section 508 is Getting Old

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[Christmas, the final frontier](#), [deejayqueue](#), [Creative Commons](#)

# Section 508 is Getting Some Work Done

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- Will reference modern standards (Web Content Accessibility Guidelines 2.0, A and AA, probably)
- Long overdue
- We know where it's heading

# The ADA is Changing, Too

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- ADA Title II and Title III
  - Will encompass information technology explicitly
  - Will specify Section 508 (after update) and/or WCAG 2.0

# WCAG 2.0 Versus 508

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- Less technology-specific
- More generally applicable

- ADA, Sections 503 and 504 are the treasure
- 508 and EITA are the treasure maps



# Accessibility as Treasure

# FEDERAL COMPLAINTS

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Lessons to Learn



# A Partial List

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- University of Colorado at Boulder, announced 5/2014
- University of Montana, settled 3/2014
  - <https://nfb.org/national-federation-blind-applauds-groundbreaking-agreement-equal-access-higher-education>
- Louisiana Tech University, settled 7/2013
  - <http://www.justice.gov/opa/pr/2013/July/13-crt-831.html>
- South Carolina Technical College System, Settled 3/2013
  - <http://www2.ed.gov/about/offices/list/ocr/docs/investigations/11116002-a.html>
- Penn State University, settled 10/2011
  - <https://nfb.org/node/958>
- Maricopa Community College District, filed 5/2012
  - <https://nfb.org/national-federation-blind-and-blind-student-file-suit-against-maricopa-community-college-district>
- More from NCDAE
  - <http://ncdae.org/blog/recent-legal-issues/>

# Accessibility as Defined in One Settlement

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- “Accessible” means that individuals with disabilities are able to **independently** acquire the **same** information, engage in the **same** interactions, and enjoy the **same** services within the **same** timeframe as individuals without disabilities, with **substantially equivalent** ease of use.
  - From Department of Education Office of Civil Rights settlement with University of Montana, 3/2014

# Typical Settlement Scope

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- “...the University must implement a policy that requires the deployment of accessible technology and course content in the University setting. To that end, **the University shall conduct a review of the accessibility of its technology and instructional materials and shall ensure that, from the effective date of and consistent with the Settlement Agreement, all technology, including websites, instructional materials and online courses, and other electronic and information technology for use by students or prospective students, is accessible.**”  
(Paragraph 13(a))

# Trends in Settlements

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- Point to WCAG 2.0 A, AA standards
- Encompass public, internal websites and web applications
- Establish subject matter expert(s)
- Measure progress and report

# Responsibilities

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- We use technology everywhere.
  - We request/approve purchase and use of products.
  - We administer policy
  - We administer budgets
  - We contribute content
- Accessibility follows technology.

# Opportunities

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- Learn new skills.
- Provide more open environments.
- Further education and employment.
- Facilitate interaction with the community.
- Increase independence for constituents.
- Reduce risk exposure.
  - Don't let focus on risk hinder you.

# No Need to Hide

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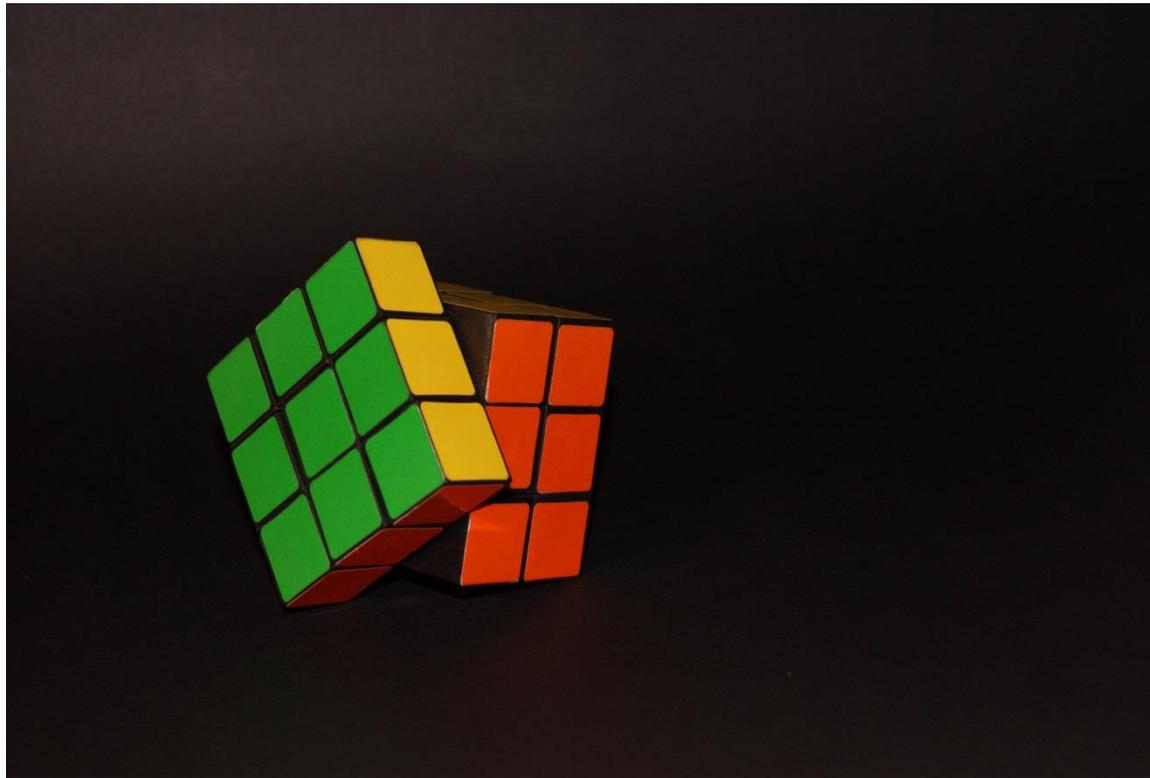
# HOW DO WE START?

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The Hardest Step is the First One

# Challenges and Frustrations

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[Rubik Cube](#), [josu.orbe](#), [Creative Commons](#)

# Our Rubik's Cube: Accessibility in Enterprise

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- Technology accessibility is unknown/misunderstood
- Competing interpretations of accessibility
- Hard to find apples to compare to apples
- Accessibility knowledge centralized, responsibility widespread

# It's Big

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[Godzilla statue Tokyo, Ian Myles, Creative Commons](#)

# But It's Awesome

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Golden Gate Bridge, Kevin Cole, Creative Commons

# Paradigm

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- Build it in, don't bolt it on
- Procurement
  - Software
  - Web design
  - Free or fee-based
- Break it down
- Control what you can control
- Start with the easy stuff (more on that later)

# PIECES OF THE ACCESSIBILITY PIE

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What to look for to make your content more accessible.

- Presentation and Structure
- Title and Language
- Consistency
- Headings
- Lists
- Links
- Tables
- Text equivalents
- Color
- Fonts
- Forms
- Odds and ends
- Priority

# Topics

# Presentation vs. Structure

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- Presentation: Seen on screen.
  - How you organize the content.
- Structure: Behind the screen.
  - Taking your presentational elements and converting them into a language that technology understands.
  - Structural elements make content easier to use for everyone.

# Title and Language

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- Give each page a Title.
- Set primary language of page.
  - Word does this automatically for the document.
  - Content Management Systems: it depends.
  - Need to specify if part of a document is in another language.

# Consistency

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- Consistent layout
- Consistent labels and identifiers on form controls

# Headings

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- Presentation
  - Apply to sections, subsections
  - Establish logical structure of your document
- Structure
  - Provides navigation in assistive technology, hopefully soon in browsers.
  - Weighted heavier in searches.
  - Makes visual styling easier in most authoring tools.
- WebAIM Screen Reader Survey, 5/2012
  - “The use of properly structured headings remains of great importance.”

# More Accessible Headings

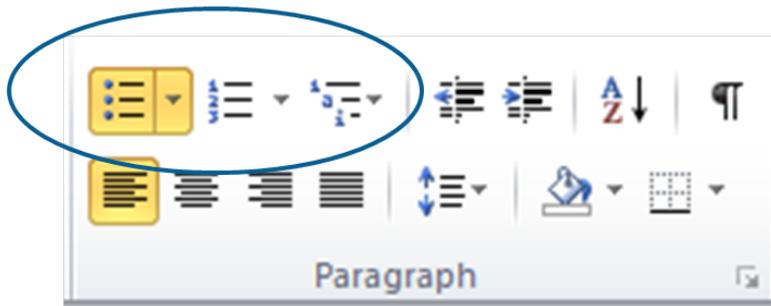
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- Word: Styles
- Content Management System: Styles
- Design software: Headings
- Don't just make visual changes

# Lists

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- Presentation
  - Organize related items.
  - Show priority, order with numbered lists.
  - If you have a list, then separate it out from your body text.
- Structure
  - Provide users of AT notice that there is a list and ease navigation through lists.
  - Keep lists formatted properly on small screens.



- Most tools have something to create lists automatically
  - Also makes them structural lists

# More Accessible Lists

# Links

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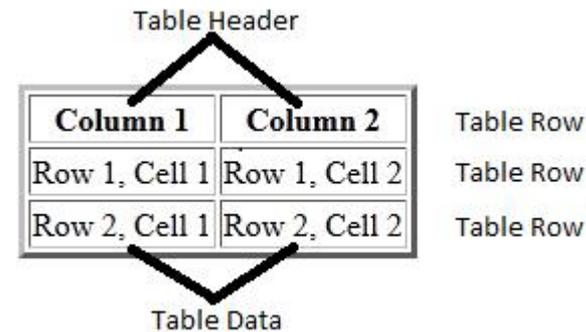
- Include the website address (URL), Help text and Link text
  - URL
    - The actual web site address: <http://www.ok.gov/abletech>
  - Link text
    - Words in the sentence that describe the link: [Learn about Oklahoma ABLE Tech](#)
  - Help text/screen tip
    - Text that appears on mouse-over and tells users where the link goes:  
Oklahoma ABLE Tech

# More Accessible Links

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- Use descriptive link text
- Consider medium
  - Documents may be printed
    - Make URL visible in addition to descriptive text
  - Web pages are interacted with
    - Make link text descriptive and embed link

- Means of showing data sets.
- Simple tables will have a single row of headers for the columns and one column of headers for the rows.
- Table tags include Table, Row, Data, Header



# Tables

# Accessible Table Tips

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- Provide Table Summary, especially for complex or large tables.
  - Describe the table structure if there are nested headers.
  - Summarize table data
- Add a Caption.

# Complex Tables

	Group A		Group B		Group C	
	Item 1	Item 2	Item 1	Item 2	Item 1	Item 2
Experiment 1	Week 1					
	1.1	2.2	3.3	4.4	5.5	6.6
	Week 2					
	11	12	13	14	15	16
Experiment 2	Week 1					
	1.2	2.3	3.4	4.5	5.6	6.7
	Week 2					
	10	11	12	13	14	15
Experiment 3	Week 1					
	0.1	0.2	0.3	0.4	0.5	0.6
	Week 2					
	1	2	3	4	5	6

# Handling Complex Tables

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- A complex table will need more complex summary.
- If you have a table that is complex, then consider simplifying.
- You can also do table markup in HTML or Acrobat Pro.
  - Assign an ID to a header cell so that you can associate data cells to more than one header.

# Layout Tables

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- Layout tables can be accessible
  - Use them wisely if you cannot avoid it
- Do not include summary, header or other data table semantic information
- Reading order is always left to right, top to bottom...

# Read This...

---

alright?

this

Is

# How About Now?

---

		alright?
	this	
Is		

# Text Equivalents

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- Describe visual elements with text.
  - Images, logos, charts, graphs, etc.
- Convey the meaning of the visual element.
- Can take multiple forms in a document.
  - Alternative text
  - Caption
  - Text in the document

# Alternative Text

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- Concise and meaningful.
  - Set context in body of document.
    - Keep relevant text in close proximity to the visual element.
  - No filenames, preferably no repeated captions.
- Aim for 120-150 characters.



- What does the image convey?

# Context is Key

# Longer Descriptions

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- Alternative text should be brief, but a brief description may not be enough.
  - Use body text and refer to it in your alt text.
  - Use a descriptive caption.
  - If the description is not in the body, then write and publish it elsewhere.
    - Appendix
    - Separate linked page, linked or attached file

# Image Descriptions

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- No need to say “image of...” or “picture of...” unless that’s part of the meaning.
  - If you are showing photos from an art exhibit, you may want to point out that it is a photograph, for example.
- Assistive technology will let the reader know that the image is an image.

# Text in Images

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- Text in images is invisible to technology.
- Put the text into your alternative text if it is part of the message that the image conveys.
  - For example, text in a protest sign should be in alt text if it is relevant and needs to be conveyed.
- Provide text as text whenever possible.

# Charts and Graphs

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- Table of data used to create chart or graph is good alternative.
- Explain the chart or graph.
  - Title
  - Axis labels
  - What does each line, bar do?
  - What does each pie slice represent?
- May need more than alternative text field.

# Fonts

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- Use easy to read fonts.
- Aim for 12 point or larger.
- Don't fully justify
- Don't use all caps

Don't do this...

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Do something like  
this instead...

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Example 2

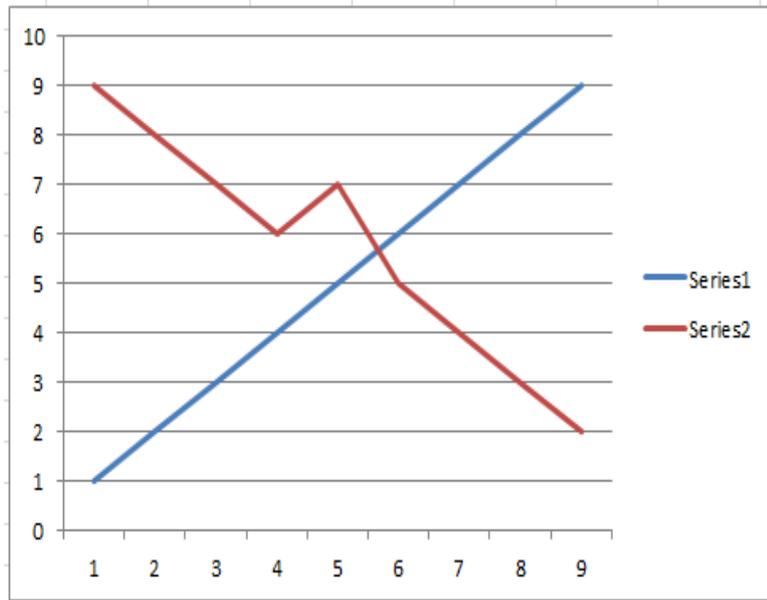
Product List  
*Printers*  
Laser  
Model 1 - 4 ppm - 2 bin  
Model 2 - 10 ppm - 3 bin  
  
Ink Jet  
*Scanners*

Example 1

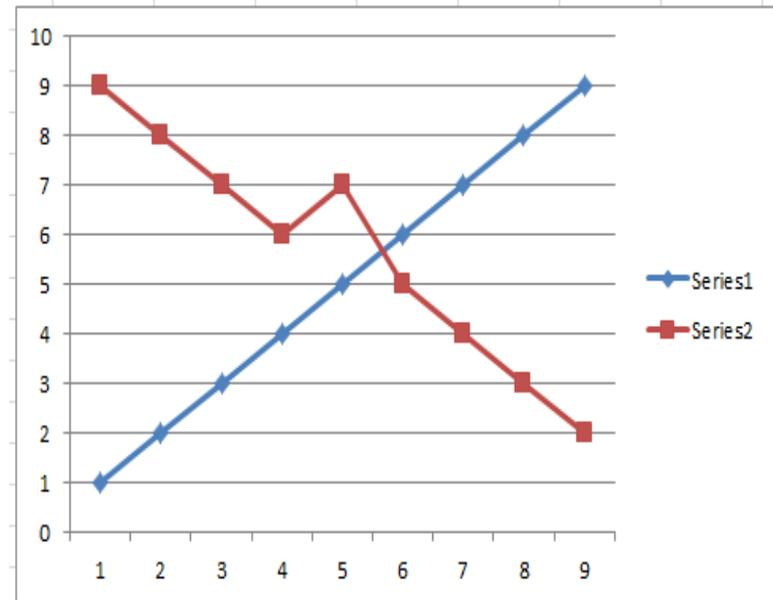
**Product List**  
***Printers***  
Laser  
Model 1 - 4 ppm - 2 bin  
Model 2 - 10 ppm - 3 bin  
  
Ink Jet  
***Scanners***

# Color Contrast

# Don't do this...



# Do this instead...



# Color Only

# Form Basics

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- Consistent, logical layout
- Clear instructions
- Good error handling
- Obvious indication of required fields
  - Remember to use more than color
- Word forms are not as accessible
  - PDF, HTML better
- Word still good for layout

# Social Media

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- YouTube
- Facebook
- Twitter
- Instagram

# Common Social Media Accessibility Barriers

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- Contact
  - Put your information on your profile page
- Images
  - Alt text? Not so much.
  - Twitter challenge: 140 character limit
    - Separate Tweet with alt
- Flyers
  - Often not accessible when viewed in social media
  - Link back to web page with information, or put in Tweet, Facebook post
- More on the ABLERech Resources page

# Remember...

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- Transcripts and closed captions
- Keyboard accessibility
  - Visible focus
  - Logical order
  - Interactions
- Plain language

# Priority

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- Critical pathways
  - Can a job seeker get information, participate in programs offered online?
- Impact to access
  - No keyboard access? Fix it soon.
- Resources available
  - Some fixes are easier than others.
- Impact on existing design
  - You may have to work around a color contrast problem.
- Site traffic
  - Pages hit often need attention first.
- Take advantage of templates or code libraries
  - Fixes in one place cover a lot of ground.

# Consider Day-forward Approach

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- New or revised
  - Make it accessible as you work on it.
- Existing/legacy
  - Remediate based on resources and impact to access.
  - Be ready to make it accessible upon request.

# Common Barriers to Accessibility in Technology

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- No headings
- No lists
- No alternative text
- No table headers identified
- Poor color contrast and use
- Confusing or redundant link text
- Little to no keyboard access
- Documents and presentations
  - PDF images
  - Prezi, Tackk

# The Easy Stuff

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- Headings
- Lists
- Alternative text
- Table headers
- Color contrast and use
- Links

# HOW SOME OF THESE TECHNIQUES MAKE A MORE ACCESSIBLE WEB

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# Techniques to Help People with Vision Disabilities

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- Higher color contrast
- Good use of color
- Text equivalents for visual elements
- Good web semantics
  - Progressive enhancement
- Accessible scripting
  - Programmatically available



- What does the image convey?

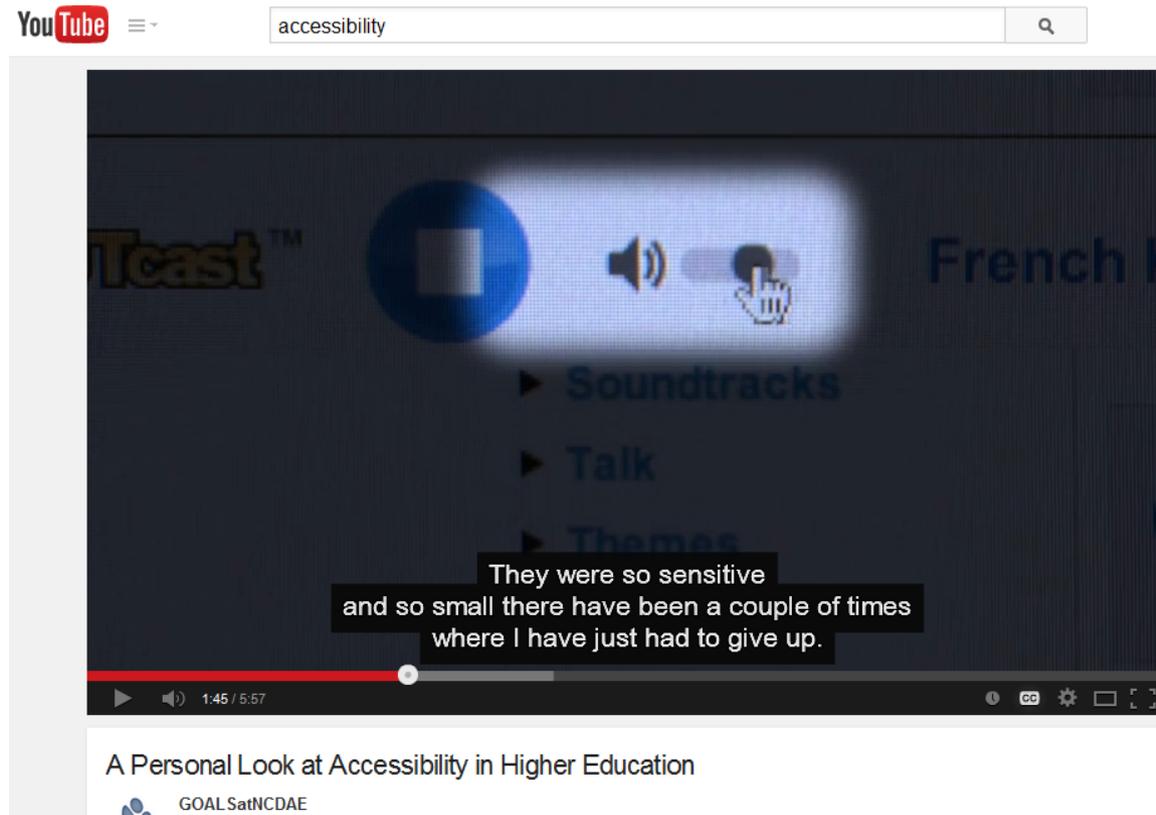
# Text Equivalents

# Techniques to Help People with Hearing Disabilities

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- Captions for video
- Transcripts for audio

# Closed Captions



The image shows a screenshot of a YouTube video player. At the top, the YouTube logo is on the left, and a search bar with the text "accessibility" is on the right. The video player itself is the central focus, displaying a dark interface with a blue play button, a volume icon, and a hand cursor. Below these icons, there are menu options: "Soundtracks", "Talk", and "Themes". At the bottom of the video frame, a white text box contains the following closed captions: "They were so sensitive and so small there have been a couple of times where I have just had to give up." The video progress bar at the bottom shows the video is at 1:45 out of 5:57. Below the video player, the video title "A Personal Look at Accessibility in Higher Education" and the channel name "GOAL SatNCDAE" are visible.

# Techniques to Help People with Mobility Disabilities

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- Keyboard accessibility
  - Visible focus
  - Everything available to keyboard that is available to the mouse
  - Means to skip repetitive navigation
- Consistency between link labels and text
  - Speech recognition software

# Visible Focus

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Oklahoma ABLE Tech / [IT Accessibility](#) / Newsletters / August2014



## Oklahoma ABLE Tech Informatio Technology August 2014 Newsletter

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The logo for ABLE Tech, featuring the text 'ABLE Tech' in a white, handwritten-style font on a blue, brushstroke-like background.

# Skip to Main Content Links

skip to main content



[services](#) [articles](#) [resources](#) [community](#)

 [Introduction to Web Accessibility](#)

 [WebAIM Training](#)



We have web accessibility in mind

# Imagine...

The screenshot shows the City of Wilmington website at www.ci.wilmington.de.us. The browser window includes several accessibility tools: Live Regions, ARIA, Table Inspector, Colour Contrast Analyser, WAVE, and various keyboard shortcuts. The website header features the City of Wilmington logo, navigation links (RESIDENTS, BUSINESS, VISITORS, YOUR GOVERNMENT), a search bar, and a weather widget showing 74° Cloudy. The main content area is a grid of service categories:

- CITY PROGRAMS AND EVENTS**
  - Access Wilmington
  - Bike Wilmington
  - De-Lead Wilmington
  - Parks and Recreation Activities
  - William Hicks Anderson Community Center
- CITY INFORMATION**
  - About Wilmington
  - City History
  - Population & Demographics
  - Elected Officials
  - City Maps
  - City of Wilmington Taxes and Fees
  - Earned Income Tax and Net Profits Tax
  - City of Wilmington Property Tax
  - City of Wilmington Tax Exemptions
  - Senior Citizen Programs and Information
  - Download Forms and
- CITY PARKING TIPS AND INFORMATION**
  - Handicapped Parking
  - Report a Malfunctioning Parking Meter
  - Limited-time Parking
  - Residential and Guest Parking
  - In-home Care Provider Parking Sticker
  - Child Drop Off and Urban School Permits
  - Report an Abandoned Vehicle
  - Street Cleaning
  - Booting Vehicles
  - Downtown Parking Garages and Lots
- ARTS, ENTERTAINMENT, AND SPECIAL EVENTS**
  - City Arts and Events
  - Apply for a Special Events Permit
  - Visit the inWilmington website to eat, drink, and have fun
  - Visit the Convention & Visitors Bureau website for places to go
- COMMUNITY ORGANIZATIONS AND DIRECTORY**
  - Neighborhood Planning Councils
  - Civic and Neighborhood Organizations
- KEEPING YOUR CITY CLEAN**
  - Annual Street Cleaning
  - Trash Collection
  - Recycling Collection
  - Leaf and Yard Waste Collection
  - Special Pick-ups
  - Christmas Tree Recycling
  - Community Clean-ups
  - Adopt-a-Block
- FIRE PREVENTION AND EDUCATION**
  - Fire Marshal's Office
  - Fire Protection Plan Review
  - Explorer Post 100
- CHILD DEVELOPMENT - COMMUNITY POLICING PROGRAM**
  - CD-CP Services
  - CD-CP Referrals
  - CD-CP Videos
- HOME BUYER AND HOME REPAIR PROGRAMS**
  - Wilmington Senior Property Tax Assistance Program
  - Home Repair Loan Program Application
  - Property Disposition RFP
  - DelawareHousingSearch.org
- REPORT NUISANCE AND VACANT PROPERTIES**
  - Vacant Property Registration Program
- ONLINE SERVICES**
  - Report It Resolve It: Non-Emergency Request for Service
  - View Your City Water, Sewer, Property Tax, Permit Bills Online
  - Pay Your Water Bill, Property Tax, and Earned Income Tax Online
  - Pay Parking and Red Light Tickets
  - Pay Your Home or Business Alarm System Registration Fee
  - Submit a New Home or Business Alarm Registration
  - Renew Your Home or Business Alarm System Registration
- APPLY FOR A CITY JOB**
  - Facts About City Employment
  - EEO Statement
  - Residency
  - Recruitment
  - Employee Benefits

# Techniques to Help People with Cognitive Disabilities

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- Straightforward layout
- Consistency
- Good instructions
- Good error handling
- Plain language

- Book by Steve Krug
- Several notions
  - Buttons look like buttons
  - Links look like links
  - Helpful link text

The World Wide Web (through a high-level review and resources).  
WebAIM's WCAG 2 checklist doesn't cover everything that WCAG 1.0 does.  
WebAIM's Section 508 Checklist  
The Six Simplest Web Accessibility Tests  
the test, and what the results mean.

# “Don't Make Me Think!”

## Before

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- When the process of freeing a vehicle that has been stuck results in ruts or holes, the operator will fill the rut or hole created by such activity before removing the vehicle from the immediate area.

## After

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- If you make a hole while freeing a stuck vehicle, you must fill the hole before you drive away.

From

[http://www.plainlanguage.gov/examples/before\\_after/wordiness.cfm](http://www.plainlanguage.gov/examples/before_after/wordiness.cfm)

# Plain Language

# Accessibility Testing on the Cheap

Tools and tips to creating and maintaining an accessible web presence.

# TEST? WHAT FOR?

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# POUR

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- Perceivable
- Operable
- Understandable
- Robust

# What Might We Look For?

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- Semantic structure
- Multimedia
- Color
- Forms
- Keyboard access
- Usability

# Implications of Disability on Computer Use

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- Mobility
  - Mouse or keyboard
  - Tab navigation and repeated navigation elements
- Visual
  - Screen reader support
  - Text equivalents
- Hearing
  - Captions and transcripts
- Cognitive
  - Plain language, logical layout

# TESTING ON THE CHEAP

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Tools to help you verify accessibility  
without spending a pile of cash.

# Tools and Resources

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- Lots out there
- Many that I use here:
  - [http://www.ok.gov/abletech/IT\\_Accessibility/Resources.html](http://www.ok.gov/abletech/IT_Accessibility/Resources.html)

# Caveats and tips

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- Don't focus on one screen reader for testing
- Don't rely on one testing method, especially for dynamic sites or software
- Inspect Element(s)
- Use a checklist with care
  - Know what the checklist is trying to find
- Focus on your content

# APPLIED TESTING

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An Overview

- Headings
- Lists
- Page title
- Table structure
- Form fields and labels associated
- Presence of ARIA
- Presence of alt attributes on images
- Presence of JavaScript



# WAVE Toolbar and Website

# Keyboard Only Testing

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- Are elements reachable by tab key?
  - Logical order
  - Visible focus
- Are elements functional via keyboard?
  - Spacebar
  - Enter key
- Error handling

- Form fields associated with labels
- Keyboard access
  - Logical tab order
  - All elements that should receive focus, do
  - Can you trigger controls?
  - Any traps?



# Testing Forms

# Form Error Handling

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- Required fields obviously labeled with more than color
- Clear instructions, logically placed
- Error location
- Focus management
- Alert screen reader user

# Modals

## Incredible Accessible Modal Window, Version 2

[blog post about the updates to this demonstration.](#)

[code on GitHub](#)

demonstrates how to make a modal window as accessible as possible to assistive technology users. Modal windows are especially problematic for screen reader users. Often times the user is able to "escape" the window and interact with other parts of the page when they should be due to the way screen reader software interacts with the Web browser.

### 's New In Version 2?

builds on [Version 1](#) and incorporates some new features and handles

shim that had to be used for VoiceOver support is no longer necessary. There is a way to allow screen reader users to use their virtual cursor to support of this feature, at the time of writing this, is complex to say the least. The implementation resolves this situation. Refer to the blog post for more details. The description of the modal dialog is now referenced by aria-describedby.

### Accessible Modal Window in Action

is in action, you just need to [view the modal window](#). If the modal window is given for how to get back to the modal window.

### Features

This sample implements the following features:

The page is divided into three sections:

1. `<div id="mainPage"></div>`
2. `<div id="modal" role="dialog"></div>`
3. `<div id="modalOverlay"></div>`

When the modal dialog is displayed, an overlay is placed over top of the mainPage so it is

### Registration Form

These are the onscreen instructions that are not attached explicitly to a focusable element. Can screen reader users read this text with the virtual cursor?

First Name

Last Name

Email Address

keyboard support in a role="dialog". The landing page allows you to enable the virtual cursor while r

[city page](#). If you can interact with the page beh

# Why it's Accessible

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- Keyboard, mouse and screen reader focus cannot escape modal without Cancel button or closing with X.
- Screen reader announces instructions and fields.
- Keyboard focus is visible on each element.

From <http://accessibility.oit.ncsu.edu/training/aria/modal-window/version-2/>

Don't do this...

---

Do something like this instead...

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Example 2

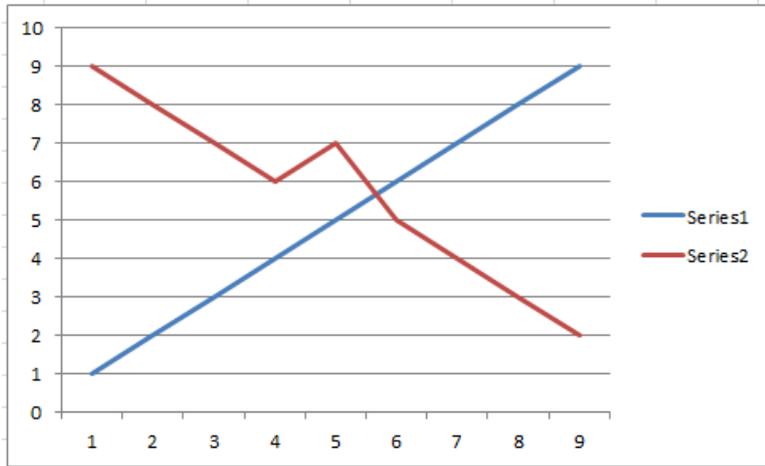


Example 1

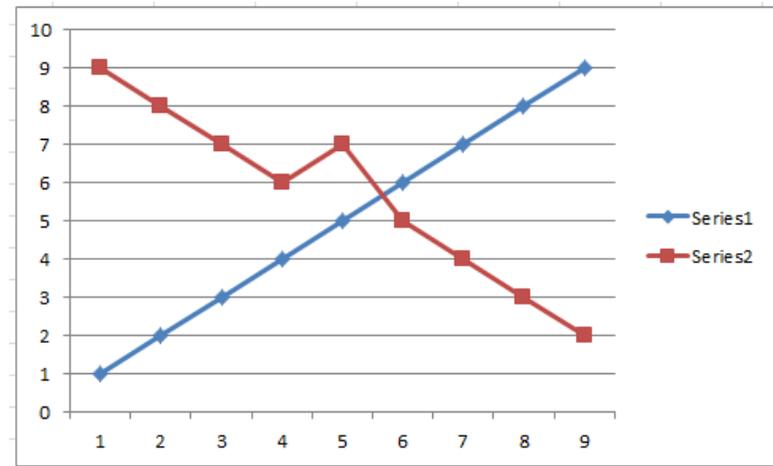


# Color Contrast

# Don't do this...

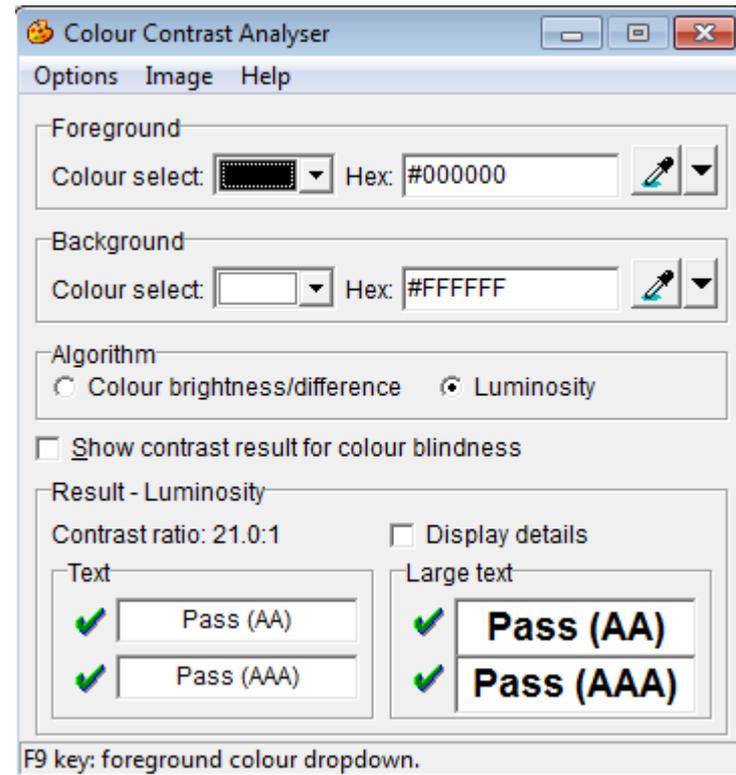


# Do this instead...



# Color Only

- Ideally, 4.5:1 ratio of text to background color
- Check with TPG Colour Contrast Analyser



# Verify Contrast

# Audio accessibility

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- Podcasts, etc.
- Transcript does the trick
- Embedded player must work with keyboard

# Video accessibility

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- Captions required
  - In sync with video
- Open or closed?
  - Consider audience, media
    - Compression of video will alter open caption appearance
- Embedded player must work with keyboard, screen reader



- Keyboard access
  - Visible focus
  - Navigation
  - Control
  - Traps

# Embedded players

# Screen Reader Testing

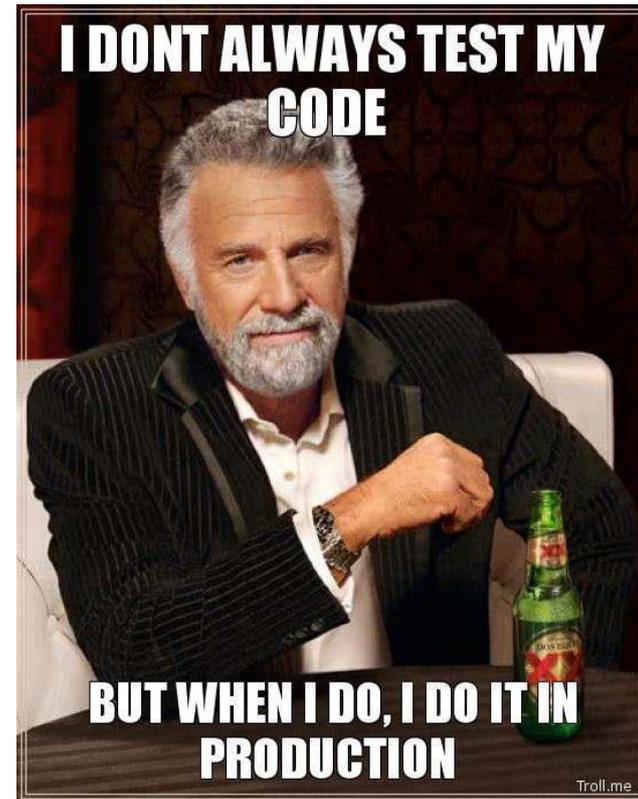
---

- Windows
  - JAWS (\$\$\$\$)
  - NVDA ( )
  - WindowEyes (\$\$)
- Apple
  - Voiceover (built in)



# Usability

- Early and often
- Start with design and analysis
- Iterate from there



# When To Test

# Checklists and resources

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- Oklahoma EITA Technical Assistance Document
  - <http://www.ok.gov/about/documents/tad%202005.pdf>
- ABLE Tech Resources
  - [http://www.ok.gov/abletech/IT\\_Accessibility/Resources.html](http://www.ok.gov/abletech/IT_Accessibility/Resources.html)

# Basics of Multimedia Accessibility

Considerations for Creating More  
Accessible Digital Multimedia on the Web

# CONCEPTS

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# Audio and Video

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- Usable by everyone
  - Hearing
  - Vision
  - Mobility
  - Cognitive
  - Learning styles
- Considerations
  - Transcription/captioning
  - Audio description
  - Keyboard access

# Some Definitions

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- Transcript
  - Exact text that is spoken
  - Most time and resource intensive piece
- Caption
  - Transcript plus timing information for video
  - May be a separate track from video
- Audio description
  - Describes visual elements in video
  - Separate track from video

# Open and Closed

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- Open captions
  - Overlaid on the video itself
  - Cannot be turned on or off
- Closed captions
  - Separate track from the video
  - Can be turned on and off
  - Resulting caption file can be basis for searchable, indexed file

# Live Captioning

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- Requirement for webcasts, webinars, etc.
- Vendor provided service
- Done remotely

# Audio Accessibility

---

- Podcasts, etc.
- Transcript does the trick
- Embedded player must work with keyboard

# Video Accessibility

---

- Captions required
  - In sync with video
- Open or closed?
  - Consider audience, media
    - Compression of video will alter open caption appearance

# Embedded Players

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- Be navigable using a keyboard;
- Not interfere with accessibility features of other software or the operating system;
- Provide an on-screen indication of the current focus (the currently selected place of action);
- Use meanings consistently for any images that identify the software's controls, status, or program elements;

# More on Embedded Players

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- Not rely only on color to prompt users, or provide information or context;
- Provide a wide variety of color and contrast settings (only if the application allows users to adjust color and contrast);
- Not cause blinking or flashing at a rate greater than 2 Hz and lower than 55 Hz; and,
- Ensure that users of AT are able to fully use and navigate through electronic forms, and provide any necessary cues and directions to the AT.
  - From <http://www.howto.gov/web-content/accessibility/508-compliant-and-accessible-multimedia>

# CAPTIONING

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# Why?

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- Provide better access
- Multi-modal learning
- English as a second language
- Searchable transcripts

# Transcription Approaches

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- Do it yourself (DIY)
  - MAGpie
  - MacCaption
  - CaptionTube
- Outsource
  - 3Play Media
  - Automatic Sync Technologies
  - CPC
- Automatic
  - Docsoft
  - YouTube

# DIY

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- Lots of tools available
  - Free
    - MAGpie
    - YouTube
  - Online
    - CaptionTube
  - Paid, installed
    - MacCaption
    - CaptionMaker

# Re-voicing

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- Create initial transcript with local speech recognition
  - Dragon Naturally Speaking
  - Operating system based speech recognition
- Steps
  - Listen
  - Dictate
  - Cleanup

# Weighing Re-voicing

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- Advantages
  - Speed
  - Relative accuracy
  - Efficiency
  - Portability
- Disadvantages
  - Still labor intensive
  - Still requires cleanup
  - Learning curve with speech recognition software

# Outsourcing

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- May be best way for you, or part of your solution
- Advantages
  - Guaranteed turnaround, accuracy
  - Possibility for volume discounts
- Disadvantages
  - Potential expense
    - More expensive to rush

# Outsourcing Vendors

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- 3Play Media
- Automatic Sync Technologies
- Lots more here: <http://www.dcmp.org/ai/10/>



# Automatic Captioning

# Automatic Voice to Text

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- Speech recognition technology drives automatic transcription
- Challenges
  - Inaccuracy
    - Poor audio
    - Multiple speakers
    - Accents
  - Time to repair vs. starting from scratch
- Successful for repeated, single speaker
- Ever-improving technology

# YouTube Automatic Captioning

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- Can do from scratch
- Can type text, have it add timing
- Can upload existing caption file

- More here:

[https://support.google.com/youtube/topic/3014331?hl=en&ref\\_topic=4355241](https://support.google.com/youtube/topic/3014331?hl=en&ref_topic=4355241)

# Captioning Best Practices

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- Synchronized with video
- Accuracy 99% or higher
- 1-2 lines
- Do not cover up graphics or important visual content
- Use mixed case letters
- Break at natural pauses if possible
- Don't correct grammar of speaker
- End caption at end punctuation
- Include unspoken information, like music, sound effects, speaker identification

# Captioning Resources

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- Described and Captioned Media Program (DCMP) Captioning Key <http://www.dcmp.org/captioningkey/>
- Media Access Group at WGBH FAQ <http://main.wgbh.org/wgbh/pages/mag/services/captioning/faq/sugg-styles-conv-faq.html>
- DCMP Caption it Yourself (CIY) <http://www.dcmp.org/ciy/>
- The Ohio State University's Accessible Classroom Technologies Wiki <https://carmenwiki.osu.edu/display/10292/Captioning>
  - Subtitle Edit: <http://www.nikse.dk/subtitleedit>

# Questions?

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