



Is your digital communication accessible?

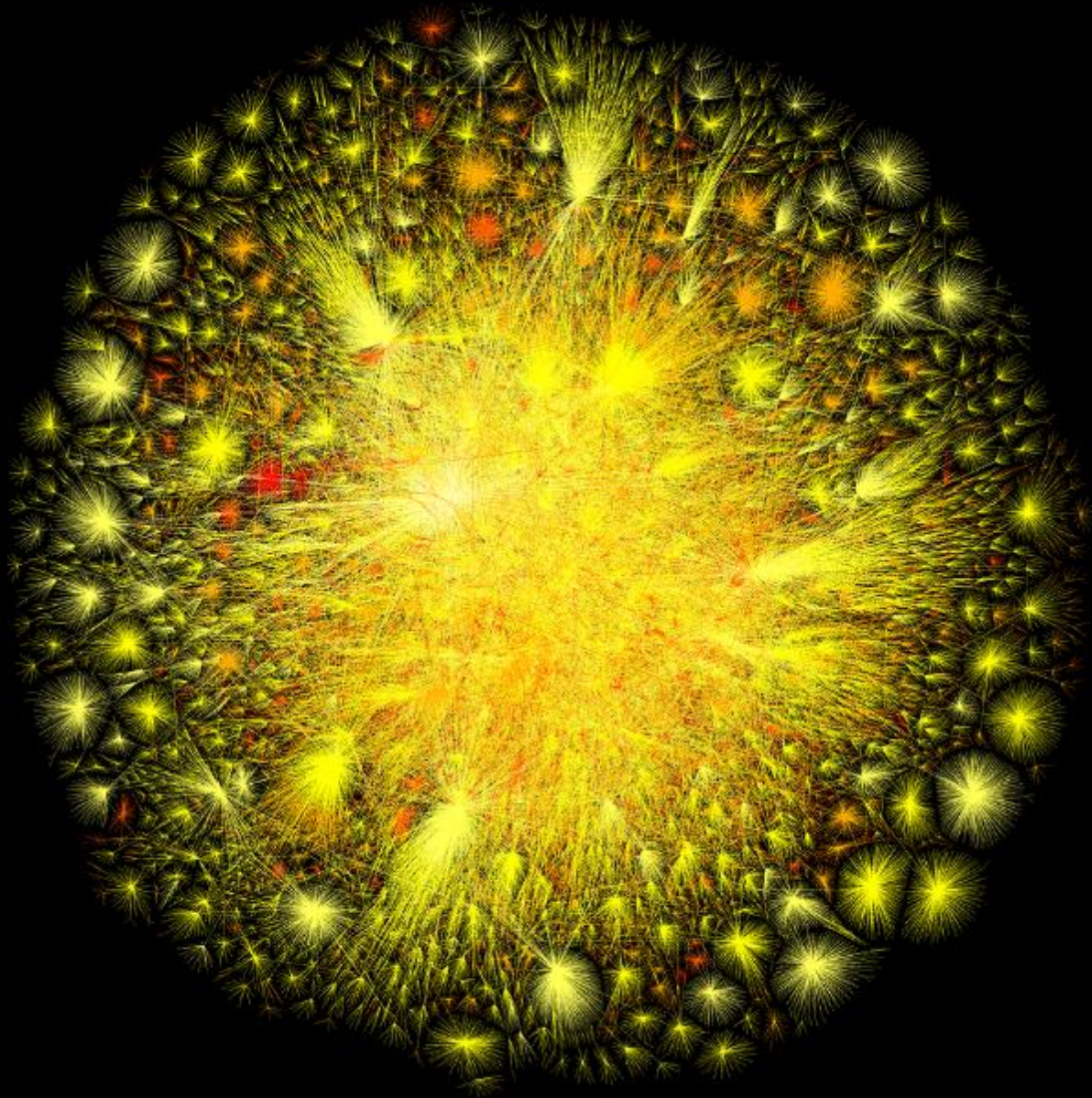
Terrill Thompson

Technology Accessibility Specialist

University of Washington

tft@uw.edu

@terrillthompson



The Opte Project / opte.org

Digital Communication

- Nearly 3 billion Internet users
- Nearly 1 billion websites
- Over 96 billion emails sent today
- Nearly 2 billion Google searches today
- Over 3 billion videos viewed today on YouTube
- Over 1.2 billion active Facebook users

<http://internetlivestats.com>

The Typical Computer User





Resolutions:

640 × 480
640 × 480 (stretched)
720 × 480
720 × 480 (stretched)
800 × 500
800 × 600
800 × 600 (stretched)
1024 × 640
1024 × 768
1024 × 768 (stretched)
1152 × 720
1280 × 800
1280 × 1024
1280 × 1024 (stretched)
1440 × 852
1440 × 852 (stretched)
1680 × 1050

Font Size:

16

9
10
11
12
13
14
15
✓ 16
17
18
20
22
24
26
28
30
32
34
36
40
44
48
56
64
72

Ability on a continuum



See

Hear

Walk

Read print

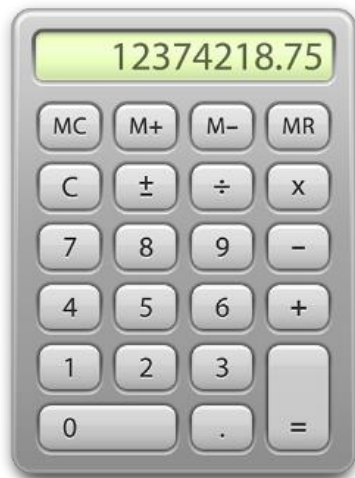
Write with pen or pencil

Communicate verbally

Tune out distraction

etc.

Examples of "assistive technologies"





Building An Accessible Digital Environment

Can I access it without sound?



Scientists witness underwater volcanic eruption for the first time



UW (University of Washington)

 3,894


39,674

 Add to  Share  More

 64  7

Can I access it without a mouse?

Speaker



JARRET CUMMINGS
Director, Policy and External Relations
EDUCAUSE

Participant List (246)

Hosts (3)

- _Educause Help, Elizabeth Cline
- _Technical Help, Loren Benavente
- Lisa Star, EDUCAUSE

Presenters (2)

- Jarret Cummings
- Marc Hoyt - NC State

Participants (243)

- Albert Borroni
- Alena Rodick - SUNY ESC
- Ali Jacobs
- Andrea GillaspYSteinhilper Lowe...
- Anita Norton (JHU/Excelsior Col...
- Ann Piotrowski
- Anne
- Anne Gross NACUBO
- Anne Klingen - U of Mississippi
- Annette Torrey, Selva Regina Un...
- Annette Von Herry, Cardinal Strit...
- April Haddock
- Art Morgan - AST
- Audrey Williams - Mississippi State
- Beloit College
- Beth Evans
- Brenda Adrian
- Brenda Voss

Chat & Ask Questions (Everyone)

Dev Bose: HI, we're waiting to get our meeting room set up (on our end) in AZ, but should join in soon.

_Educause Help, Elizabeth Cline: The session has now begun. Thank you for your participation!

_Educause Help, Elizabeth Cline: Chat or ask questions using this chat area. Tweet using this hashtag: #EDULIVE

_Educause Help, Elizabeth Cline: Resources can be found here: <http://www.educause.edu/events/educause-live-teach-act-update>

_Educause Help, Elizabeth Cline: The session archive with slides and recording will be available later today here: <http://www.educause.edu/events/educause-live-teach-act-update/2015teach-act-update-path-voluntary-guidelines-accessible-instructional-materials>

_Educause Help, Elizabeth Cline: TIP: If you have a generic name, go to the top of the Participant List > Click on the drop down icon with lines > Select "edit my info." We want to know who you are!

Cindy Mesereau - UWF: Should we be hearing something?

_Technical Help, Loren Benavente: @Cindy

Jiatyan Chen: yes, Cindy

_Technical Help, Loren Benavente: Yes, please see my private chat

_Technical Help, Loren Benavente: I will help you :)

Laurie Vasquez, SBCC: This legislation matters to US!!

Janet Bickel-Burton is typing...

Educause LIVE! | TEACH Act Update

Agenda


- TEACH Act Background
- Collaborative Process
- Key Elements of Emerging Legislation
- The Path Forward


UNCOMMON THINKING FOR THE COMMON GOOD

EDUCAUSE

Tweet It!

Tweet your observations and reflections with the hashtag #EDULIVE






Audio Issues 1-877-944-2300, 99455#

Audio Issues Link

Thank you EDUCAUSE Live! Sponsor



dell.com/hied

Take the #nomouse challenge!



nomouse.org

Can I access it without seeing it?

Introduction to Physics Course Syllabus Textbook Our sole text for this course will be Introduction to Physics, Second Edition, authored by the instructor. Course Objectives to offer students exposure to basic principles of Physics to provide students with rich, thought-provoking discussions during lecture sessions to provide students with experiential learning opportunities during laboratory sessions. Class Schedule Week Topic Reading Assignment 1 Course Introduction Chapter 1 2 Inertia, equilibrium, kinematics Chapters 2-3 3 Newton's laws, vectors, momentum, energy Chapters 4-7 4 Matter, elasticity, scaling Chapters 8-10 5 Wave kinematics, sound, electricity, magnetism, induction Chapter 11-15 6 Light, reflection and refraction, emission Chapters 15-18 7 Review, final exam Grades Grades will be assigned on a ten point scale (90 to 100 is an A, 80 to 89 is a B, etc.). Homework, exams, and projects will be weighted as follows: Homework Exams Projects 1 2 Final 1 2 Final 15% 15% 15% 20% 10% 10% 15% Ce programme es également disponible en français sur demande.

Example: Syllabus with structure



Introduction to Physics Course Syllabus

Textbook

Our sole text for this course will be Introduction to Physics, Second Edition, authored by the instructor.

Course Objectives

- To offer students exposure to basic principles of Physics
- To provide students with rich, thought-provoking discussions during lecture sessions.
- To provide students with experiential learning opportunities during laboratory sessions.

Class Schedule

Week	Topic	Reading Assignment
1	Course Introduction	Chapter 1
2	Inertia, equilibrium, kinematics	Chapters 2-3
3	Newton's laws, vectors, momentum, energy	Chapters 4-7
4	Matter, elasticity, scaling	Chapters 8-10
5	Wave kinematics, sound, electricity, magnetism, induction	Chapter 11-15
6	Light, reflection and refraction, emission	Chapters 15-18
7	Review, final exam	

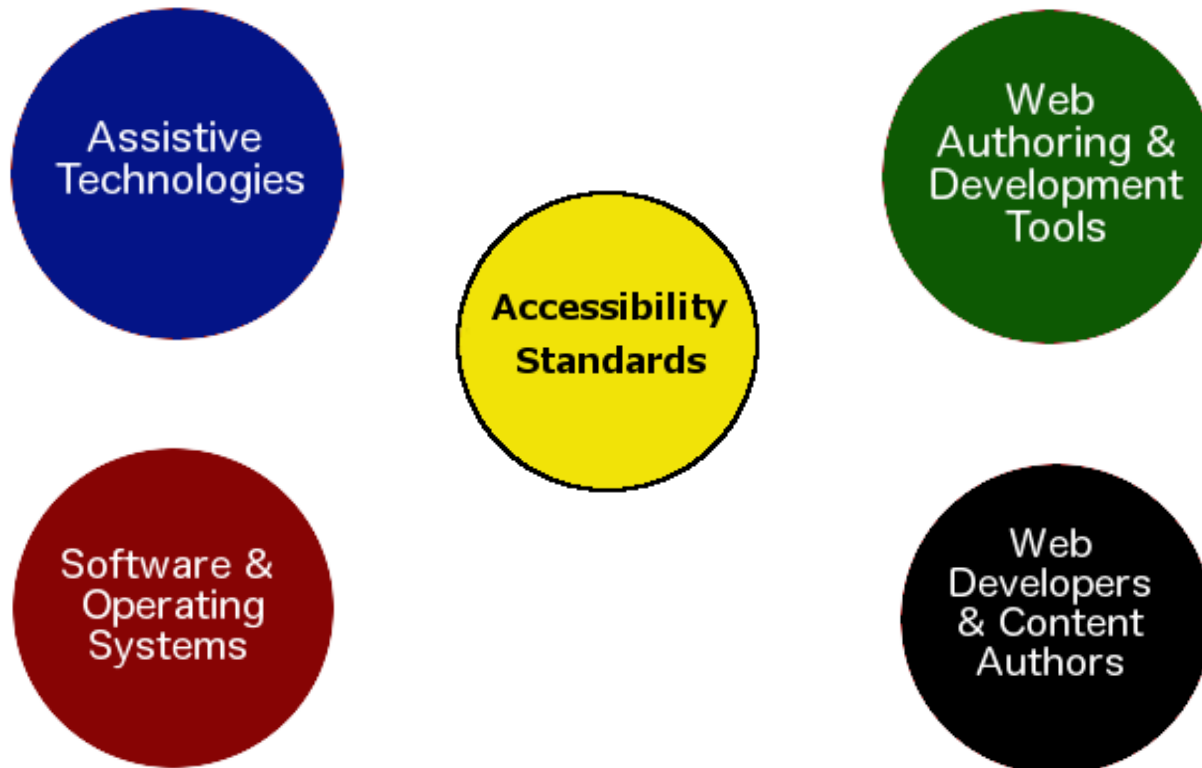
Grades

Grades will be assigned on a ten point scale (90 to 100 is an A, 80 to 89 is a B, etc.). Homework, exams, and projects will be weighted as follows:

Homework	Exams			Projects		
	1	2	Final	1	2	Final
15%	15%	15%	20%	10%	10%	15%

Ce programme est également disponible en français sur demande.

Who's Responsible?



Example #1: HTML Web Pages



HTML 1.2 (1993)

Headings

The heading elements are

`<H1>, <H2>, <H3>, <H4>, <H5>, <H6>`

It is not normal practice to jump from one header to a header level more than one below, for example for follow an H1 with an H3. Although this is legal, it is discouraged, as it may produce strange results for example when generating other representations from the HTML.



HTML 1.2 (1993)

Alt Text for Images

The IMG element is empty: it has no closing tag. It has two attributes:

SRC	The value of this attribute is the URL of the document to be embedded. Its syntax is the same as that of the HREF attribute of the A tag. SRC is mandatory.
ALIGN	Take values TOP or MIDDLE or BOTTOM, defining whether the tops or middles or bottoms of the graphics and text should be aligned vertically.
ALT	Optional alternative text as an alternative to the graphics for display in text-only environments.



World Wide Consortium Standards

- Hypertext Markup Language (HTML)
- Cascading Style Sheets (CSS)
- Web Content Accessibility Guidelines (WCAG) 2.0
- Accessible Rich Internet Applications (ARIA) 1.0



WCAG 2.0

- Became an official "W3C recommendation" in 2008 (WCAG 1.0 was published in 1999)
- Four principles:
 - Perceivable
 - Operable
 - Understandable
 - Robust
- 62 specific success criteria
 - Level A — 26 success criteria
 - Level AA — 13 success criteria
 - Level AAA — 23 success criteria



Example WCAG 2.0

Success Criteria at Level A/AA

- Alt text on images
- Captions on videos
- Color not the sole means of communicating information
- Proper heading structure
- Labels on form fields
- Visible indication of keyboard focus



U.S. Section 508 Standards

- Section 508 (law) requires accessibility of electronic & information technology developed, procured, maintained or used by federal agencies
- Standards published in 2000
- Technical Standards cover six categories of IT (web, software, hardware, media, telecom, & standalone)
- Refresh in progress, latest draft (Feb 2015) adopted WCAG 2.0 AA



ARIA

"Accessible Rich Internet Applications"

Communicates roles, states, and properties of interface elements for the benefit of AT users.

Answers questions like:

- What is this?
- How do I use it?
- Is it on/selected/expanded/collapsed?
- What just happened?

```
<div role="alert">
```

The email you entered is not valid. Please try again.

```
</div>
```



ARIA Landmark Roles

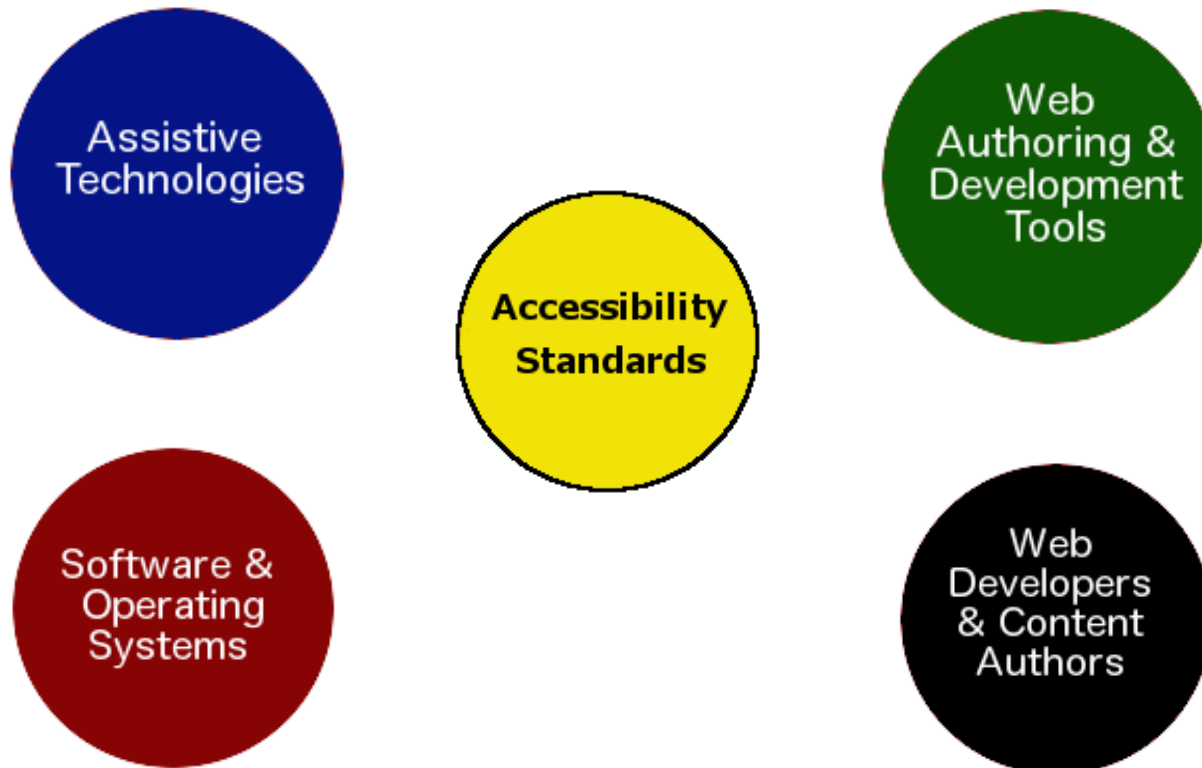
ARIA's "low-hanging fruit"

Adding these simple tags to sections of any web page will *greatly* improve the page navigability for screen reader users:



- `role="banner"`
- `role="main"`
- `role="navigation"`
- `role="search"`
- `role="complementary"` (sidebar)
- `role="contentinfo"` (footer)
- `role="application"`

























Web accessibility: Who's Responsible?



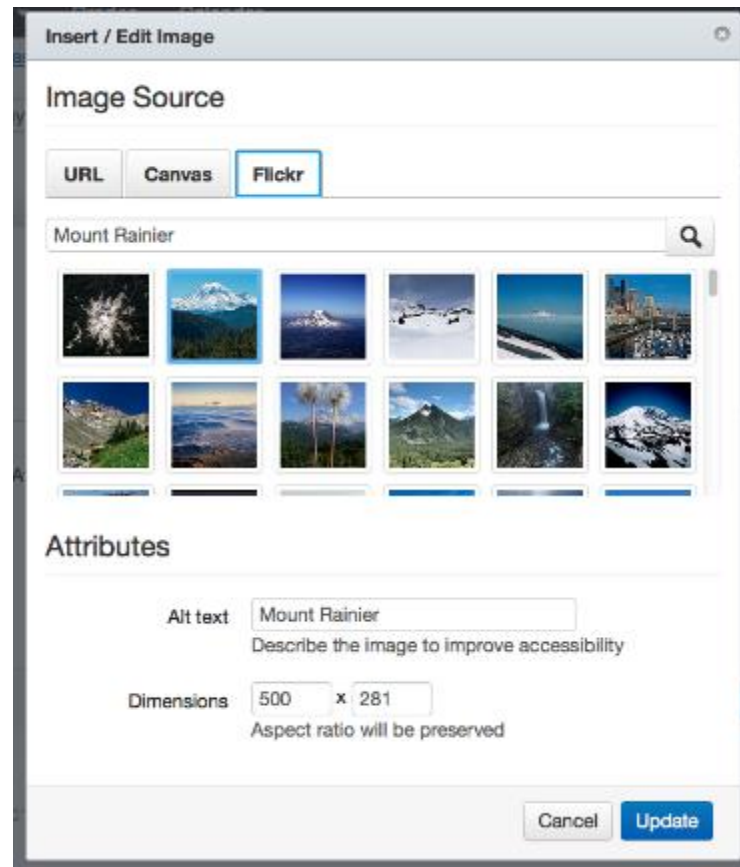
For content authors: Use headings appropriately

Title of my document (Canvas will tag this as H1)

[HTML Editor](#)

B I U                        

For content authors: Add alt text to images



Insert / Edit Image

Image Source

URL Canvas **Flickr**

Mount Rainier

Attributes

Alt text: Mount Rainier
Describe the image to improve accessibility

Dimensions: 500 x 281
Aspect ratio will be preserved

Cancel Update

Example #2:


Adobe PDF

Not this:

Example: Text with no structure

Introduction to Physics Course Syllabus Textbook Our sole text for this course will be Introduction to Physics, Second Edition, authored by the instructor. Course Objectives to offer students exposure to basic principles of Physics to provide students with rich, thought-provoking discussions during lecture sessions to provide students with experiential learning opportunities during laboratory sessions. Class Schedule Week Topic Reading Assignment 1 Course Introduction Chapter 1 2 Inertia, equilibrium, kinematics Chapters 2-3 3 Newton's laws, vectors, momentum, energy Chapters 4-7 4 Matter, elasticity, scaling Chapters 8-10 5 Wave kinematics, sound, electricity, magnetism, induction Chapter 11-15 6 Light, reflection and refraction, emission Chapters 15-18 7 Review, final exam Grades Grades will be assigned on a ten point scale (90 to 100 is an A, 80 to 89 is a B, etc.). Homework, exams, and projects will be weighted as follows: Homework Exams Projects 1 2 Final 1 2 Final 15% 15% 15% 20% 10% 10% 15% Ce programme es également disponible en français sur demande.

But this:



Introduction to Physics Course Syllabus

Textbook

Our sole text for this course will be Introduction to Physics, Second Edition, authored by the instructor.

Course Objectives

- To offer students exposure to basic principles of Physics
- To provide students with rich, though-provoking discussions during lecture sessions.
- To provide students with experiential learning opportunities during laboratory sessions.

Class Schedule

Week	Topic	Reading Assignment
1	Course Introduction	Chapter 1
2	Inertia, equilibrium, kinematics	Chapters 2-3
3	Newton's laws, vectors, momentum, energy	Chapters 4-7
4	Matter, elasticity, scaling	Chapters 8-10
5	Wave kinematics, sound, electricity, magnetism, induction	Chapter 11-15
6	Light, reflection and refraction, emission	Chapters 15-18
7	Review, final exam	

Grades

Grades will be assigned on a ten point scale (90 to 100 is an A, 80 to 89 is a B, etc.). Homework, exams, and projects will be weighted as follows:

Homework	Exams			Projects		
	1	2	Final	1	2	Final
15%	15%	15%	20%	10%	10%	15%

Ce programme est également disponible en français sur demande.

Adobe PDF



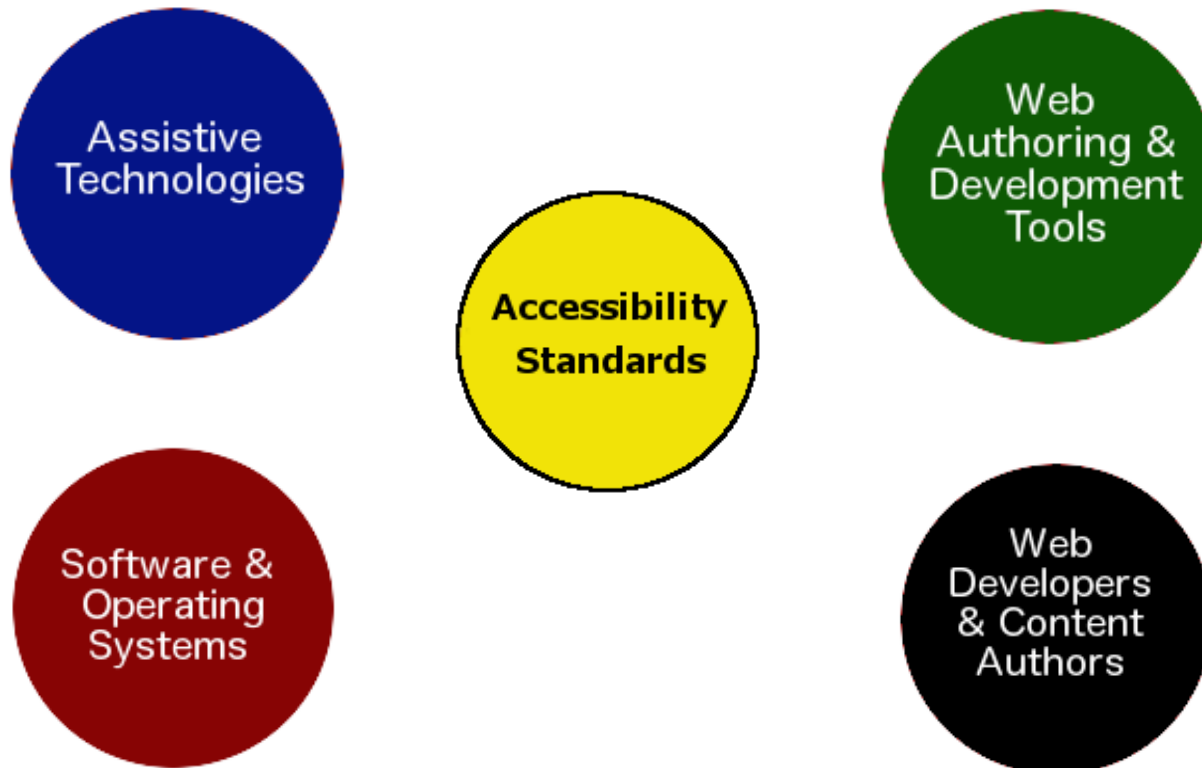
- Three general types:
 - Image
 - Document with no underlying structure
 - Tagged, well-structured document



Tagged PDF

- Was introduced in Acrobat 5.0 (2001)
- Makes it possible to communicate document structure to AT users (e.g., headings, lists, alt text)
- Must use an authoring tool that supports it
 - Microsoft Word for Windows does
 - Microsoft Word for Mac does **not**
 - Google Docs does **not**
 - Adobe InDesign does, but it's complicated
- You can *fix* accessibility of any PDF using Adobe Acrobat Pro

PDF Accessibility: Who's Responsible?



Example #3: Videos



<video>

<source src="myvideo.mp4">

<source src="myvideo.webm">

<track kind="captions" src="mycaps.vtt">

<track kind="descriptions" src="mydesc.vtt">

</video>



Different *kinds* of <track>

- captions
- subtitles
- descriptions
- chapters
- metadata

Standard track format: WebVTT

- Stands for "Web Video Text Tracks"
- <https://w3c.github.io/webvtt/>

WEBVTT

00:00:09.165 --> 00:00:10.792

You want these people.

00:00:10.792 --> 00:00:13.759

They order your products, sign up for your services,

00:00:13.759 --> 00:00:16.627

enroll in your classes, read your opinions,

00:00:16.627 --> 00:00:18.561

and watch your videos.

Example accessible media player: Able Player

<http://ableplayer.github.io/ableplayer>



Auto scroll: ☒ Language: English

Words appear in a white box: World Wide Access.

[Narrator] You want these people. They order your products, sign up for your services, enroll in your classes, read your opinions, and watch your videos. You'll never see them, but they know you- through your website. Or maybe not. **Your website's visitors aren't a faceless mass of identical mouse-clickers** but a vibrant community of individuals with varying tastes, styles, and abilities. This includes people with disabilities.

Terrill Thompson, Technology Accessibility Specialist

[Terrill] It's important for web designers and developers

Captions benefit *everyone*!



溶岩海洋地殻を作ります。

Scientists witness underwater volcanic eruption for the first time

UW (University of Washington) 5,338

40,170

Transcript

English >> Japanese

0:10 あなたが見ていることを期待するプロセス

0:13 何度も繰り返し見てのコースを通して歴史の流れを介して、

0:19 我々は、溶岩が海の床の上に進める。初めて、見えています

0:24 溶岩海洋地殻を作ります。

0:26 私たちは、3月9日の朝に、アピア、サモアから取り残さ


0:32 そして私たちはいつか露骨サイトで取得したいことを知っていました。

0:36 そして、我々はジェイソンを下に置くと...

And have many applications


US 2012 ELECTIONS

Final US presidential debate - Foreign Policy (Oct 22)



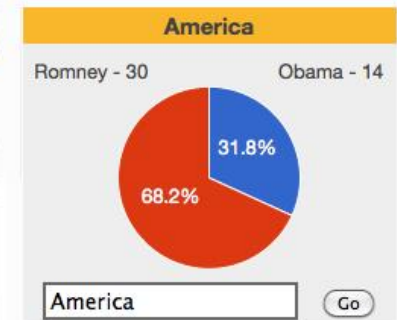
1:26:22 / 1:32:29 med

We recognise that there are places of conflict in the world. We want to end those conflicts to the extent humanly possible. But in order to be able to fulfil our role in the world, **America** must be strong. **America** must lead. And for that to happen, we have to strengthen our economy here at home. You can't have 23 million people struggling to get a job. You can't have an economy that, over the last three years, keeps slowing down its growth rate. You can't have kids coming out of



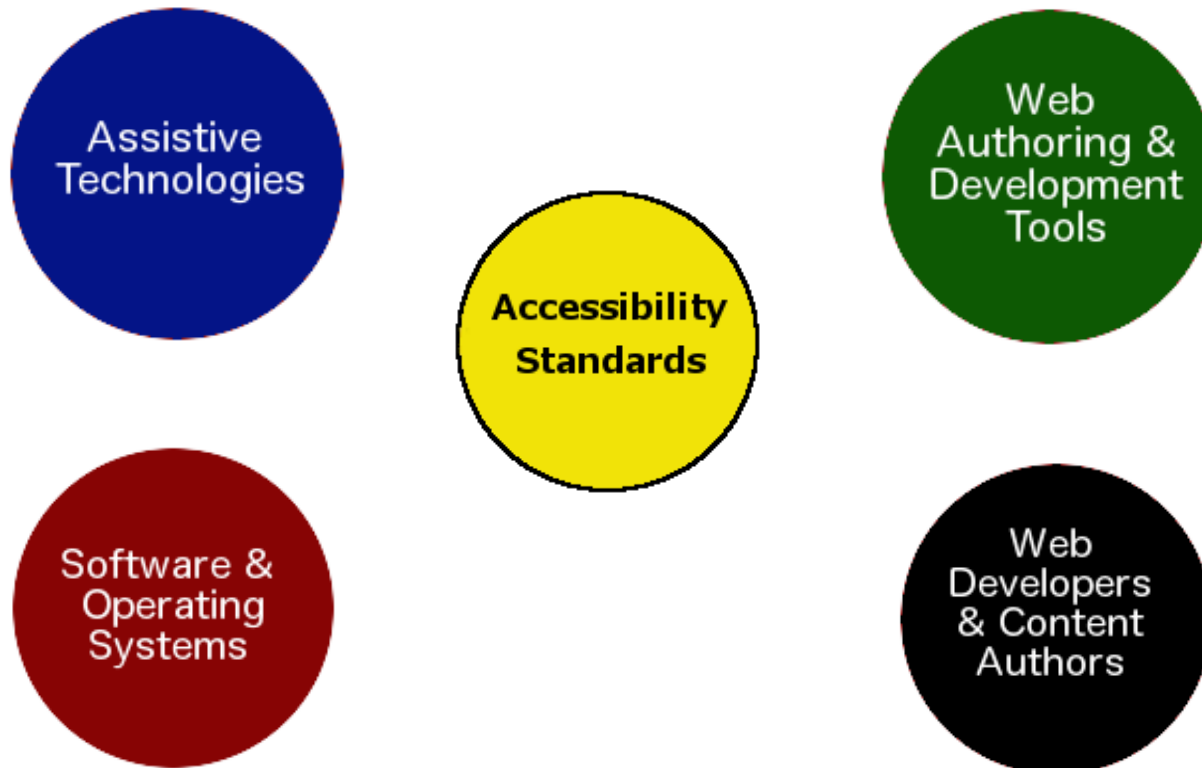
Word Count Range	Romney Frequency	Obama Frequency
5-10	2	2
10-15	1	1
15-20	1	1
20-25	2	2
25-30	4	2
30-35	5	1
35-40	0	0
40-45	1	2
45-50	2	0
50-55	3	1
55-60	0	0
60-65	0	0
65-70	0	0
70-75	3	1
75-80	2	1
80-85	3	2
85-90	2	2
90-95	0	0

ALJAZEERA knight-mozilla OpenNews



<http://www.aljazeera.com/indepth/interactive/>

Video Accessibility: Who's Responsible?



The road to better accessibility...



Seattle #a11ycamp

<http://tinyurl.com/a11ysea2017>

Resources

- AccessComputing
<http://uw.edu/accesscomputing>
- Accessible Technology at the UW:
<http://uw.edu/accessibility>
- 30 Web Accessibility Tips:
<http://uw.edu/accesscomputing/tips>
- Able Player (open source accessible media player)
<http://ableplayer.github.io/ableplayer>
- Terrill's blog
<http://terrillthompson.com>
- These slides:
<http://staff.washington.edu/tft>