



Accessibility of Open Course Library Materials

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Students are diverse



General Purpose Code
Computer Lab
Lab Hours

CS 443 students have priority on this machine
when other lab members are available.

```
Behavior |
// START DEFINITION HERE
getNext(c,b,get());
// END DEFINITION HERE
```

Computer keyboard with a light blue overlay.





In order to be accessible, web content must be:

- Perceivable
- Operable
- Understandable
- Robust

Source: W3C Web Content Accessibility Guidelines (WCAG) 2.0, <http://w3.org/TR/wcag20>

Standards and Guidelines

- W3C Web Content Accessibility Guidelines 2.0
- W3C Accessible Rich Internet Applications (ARIA) 1.0
- Section 508 Standards (federal law)
- Draft Information and Communication Technology (ICT) Standards and Guidelines (508 refresh)
- <http://access-board.gov/508.htm>

7 Examples of Common Web Accessibility Problems

1. Images without alternate text
2. Poor use of HTML headings
3. No accessible markup on form fields
4. No accessible markup on data tables
5. No text alternatives on multimedia
6. Navigation menus or other content that requires a mouse
7. PDF's not authored for accessibility

Learn More About Accessible Web Design

Accessible University

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Welcome!

Accessible University (AU) is a fictional university, and this is its fictional home page. This page is designed to demonstrate a variety of common web design problems that result in visitors with disabilities being unable to access the content or features of a web page. Although the heading at the top of this section of the page suggests that AU may be a welcoming institution, the inaccessible design of this page sends the opposite message.

Bienvenido!

Accesible Universidad (UA) es una universidad ficticia, y esta es su página de ficción. Esta página está diseñada para demostrar una variedad de común de diseño web que se traducen en problemas de los visitantes con discapacidad no poder acceder al contenido o las características de una página web. Aunque el título en la parte superior de esta sección de la página sugiere que AU puede ser una institución de bienvenida, el diseño inaccesible de esta página envía el mensaje opuesto.

Can you spot the barriers?

This page is an improved version, with 16 accessibility problems corrected. Details about all known problems are on the [List of Problems](#) page. To see the original problems, consult the [inaccessible version](#).

AU Enrollment Trends

	2007-08						2008-09					
	CS	Eng	Eco	Phy	Psy	Spa	CS	Eng	Eco	Phy	Psy	Spa
Total	84	126	43	32	112	59	82	140	45	34	101	64
% Male	89	84	73	69	20	47	87	80	69	69	22	48
% Female	11	16	27	31	80	53	13	20	31	31	78	52

- Accessible University 2.0
- “Before” and “after” mock site with 16 accessibility problems and solutions
- <http://uw.edu/accesscomputing/AU>

Characteristics of HTML

- Highly structured language
- Possible for authors to create highly structured documents
- Possible for authors to create documents with little or no structure
- Structure is well-supported by AT
- Structure facilitates navigation for AT users (and has many other advantages)

Characteristics of Microsoft Word

- Heading structure possible through *styles and formatting*
- Alternate text can be added to images.
- No HTML-like accessible table structure
- Structural information (e.g., headings, alternate text) is communicated to AT
- Most structure is passed on to other file formats when documents are exported

Adobe PDF

- Three general types:
 - Image
 - Image with embedded fonts
 - Tagged (optimized for accessibility)
- Accessibility depends on how document was created
- Accessibility can be added later using Adobe Acrobat Pro

What about Video?



Video *can be* inaccessible to:

- People who are unable to hear it
- People who are unable to see it
- People who are unable to do either
- People who are unable to operate the player controls
- People who need to search video content
- People who don't speak the language

How to Add Captions

1. Create a transcript
2. Divide the transcript into caption-sized segments (optional, depending on choice of tool in #3)
3. Use a captioning tool to timestamp the caption-sized segments
4. Save to an output file that is appropriate for your media type

Captioning Tools

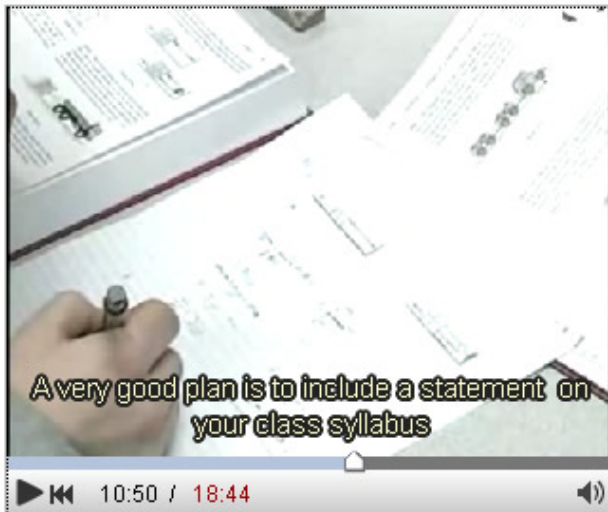
- Free Software
 - [MAGpie](#) (Win & Mac), [SubTitle Workshop](#) (Win),
[World Caption](#) (Mac), [CapScribe](#) (Mac)
- Commercial Software
 - [HiCaption](#) (Win), [MovCaptioner](#) (Mac)
- Free Online Tools
 - [dotSub](#), [Subtitle Horse](#), [CaptionTube](#)
- See my blog:
[Free Tools For Captioning YouTube Videos](#)

dotSub.com

Welcome to dotSUB - Any Video Any Language

Transcribe Invisible Disabilities and Postsecondary Education

[Click here to watch a tutorial on transcribing videos](#)



- 10:10 specific chemicals.
- 10:18 Students with disabilities have the right to confidentiality.
- 10:20 If a student appears to be struggling in class but hasn't requested accommodations
- 10:25 the professor is not advised to ask if a disability is involved.
- 10:29 But there are acceptable ways to offer assistance.
- 10:39 A very good plan is to include a statement on your class syllabus

Keyboard Shortcuts

Toggle Play / Pause	CTRL + SHIFT + P
Seek Ahead +1 Second	CTRL + SHIFT + →
Seek Back -1 Second	CTRL + SHIFT + ←
Set Caption Start Time	CTRL + SHIFT + ↑
Set Caption End Time	CTRL + SHIFT + ↓

Add a transcription line

10 : 54
10 : 57



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Flavors of Closed Captions

- Quicktime – SMIL, with captions in qt.txt
- Real – SMIL, with captions in rt.txt
- Windows – SAMI
- YouTube – SubRip, SubViewer
- W3C Timed Text - Distribution Format Exchange Profile (DFXP)
- Apple i* - Scenarist Closed Caption (SCC)

Example Output in SubRip (.srt)

1

00:00:17,000 --> 00:00:17,957

A generation ago,

2

00:00:17,957 --> 00:00:21,396

personal computers began
to make their mark on the world.

3

00:00:21,396 --> 00:00:23,429

It was the beginning of
an incredible change

Example Output in SubViewer (.sub, .sbv)

00:00:21.526,00:00:26.106

(Narrator) Lindsay's a high school sophomore, but she's already thinking about career options.

00:00:26.106,00:00:29.876

(Lindsay) Science and math are probably what I would want to go into, as a, you know,

00:00:29.876,00:00:31.886

a career, when I'm out of college.

Example Output in W3C Timed Text DFXP (.tt.xml)

```
<?xml version="1.0" encoding="UTF-8"?>
<tt xml:lang="en" xmlns="http://www.w3.org/2006/10/ttaf1"
    xmlns:tts="http://www.w3.org/2006/04/ttaf1#styling">
  <head>
    <styling>
      <style id="1" tts:textAlign="center" />
    </styling>
  </head>
  <body>
    <div xml:id="captions" xml:lang="en">
      <p begin="00:00:25.891" end="00:00:28.396">Your website's visitors aren't a faceless
        mass</p>
      <p begin="00:00:28.396" end="00:00:31.363">of identical mouse-clickers, but a vibrant
        community</p>
      <p begin="00:00:31.363" end="00:00:31.363">of individuals with varying tastes, styles, and
        abilities.</p>
    </div>
  </body>
</tt>
<!-- etc. -->
```

Uploading Captions to YouTube



Broadcast Yourself™

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[My Account](#) / Video Details: [Equal Access: Universal Design o...](#)

[Info & Settings](#) | [AudioSwap](#) | [Annotations](#) | [Captions and Subtitles](#)

or [cancel](#)

Video Information

Title:

Equal Access: Universal Design of Computer Labs

Description:

how to make computer labs accessible to people with disabilities

Tags:

computer labs accessibility disabilities

Category:





these exposed vents of volcanic gases pouring out, exposing the molten red lava,

- Caption Actions
- Translate Captions **BETA**
- Other Settings...
- Caption Selection
- English



1:52 / 2:30



360p ▲



Semi-Automatic Captioning Tools

- Upload a transcript, automatically convert that it into captions:
 - YouTube
 - [Caption Sync](#) (Automatic Sync Technologies)
 - [Docsoft](#)

Adding Closed Captions for Apple i*

- iPhones and iPods support closed captions via .scc format
- Requires many steps, either in:
 - Apple Final Cut Pro (\$999)
 - Apple QuickTime Pro (\$30), Mac version only
- “Creating Accessible iTunes U Content” (NCAM) <http://ncam.wgbh.org/about/news/creating-accessible-itunes>

Scenarist Closed Caption (.scc)

Scenarist_SCC V1.0

00:00:00:12 94ae 94ae 9420 9420 94d0 94d0 942c 942c 942f 942f

00:00:00:12 942c 942c

00:00:00:12 94ae 94ae 9420 9420 94d0 94d0 5b20 6d75 73e9
e320 5d80 942c 942c 942f 942f

00:00:09:04 942c 942c00:00:09:04 94ae 94ae 9420 9420
94d0 94d0 942c 942c 942f 942f

00:00:09:04 942c 942c00:00:09:04 94ae 94ae 9420 9420
94d0 94d0 5b6e 61f2 f261 f4ef f25d 20d9 ef75 20f7 616e f4bf
f468 e573 e520 70e5 ef70 ece5 ae80 942c 942c 942f 942f

Sample Closed Captioned Video on iPhone



Video clip compliments of NCAM:
<http://ncam.wgbh.org/mm/samples.html>

Audio Description

- Various names:
 - Audio description
 - Video description
 - Descriptive Video™
 - Descriptive narration
 - Described video
- A separate narrative track, for people who can't see critical visual content

How to *avoid* audio description

- Assure that all important information is communicated visually *and* audibly
- If video is a lecture, always be mindful that not everyone in the audience can see. Applies broadly:
 - Live lectures, people in the back can't see
 - Audio-recorded lectures, nobody can see
 - Video-recorded lectures, many people can't see

How to *add* Audio Description

- Carefully script audio description:
 - Choose words carefully so as not to distort the message
 - Find suitable moments for inserting audio (avoid conflicts with existing dialog or important sounds)
- Record audio description segments
- Output 1: Remix audio track to include audio description
- Option 2: Save as audio file. Let the media player sync it with the video (not widely supported)

YouTube Player



JW FLV Player as used at <http://uw.edu/doit/video/search>



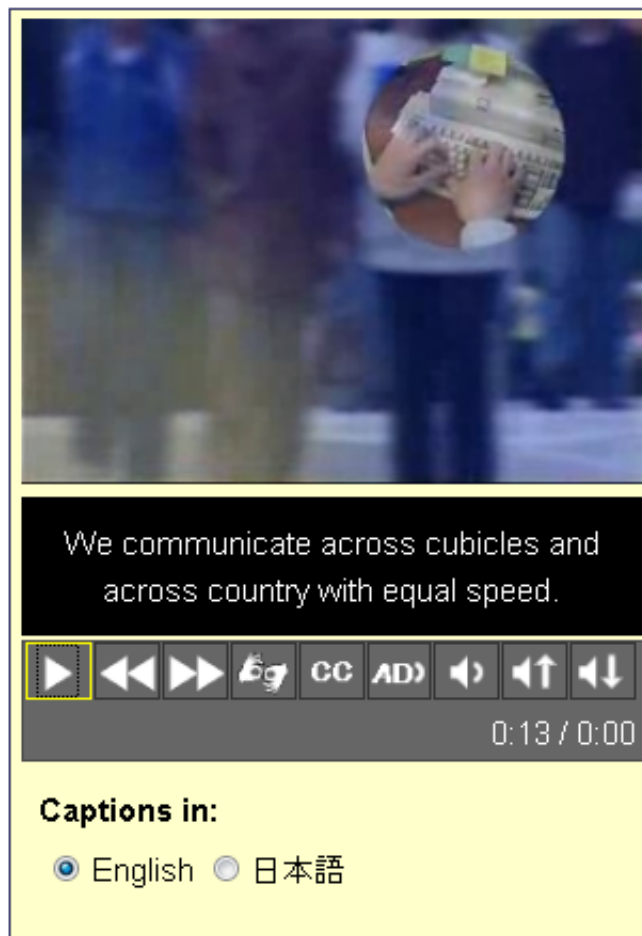
Play/Pause Stop Vol + Vol - Mute

Video made simple: HTML 5

```
<video  
  src="myvideo.ogv">  
</video>
```

Accessibility in HTML5 is a work in progress. Stay tuned to my blog: terrillthompson.blogspot.com

HTML5 <video> tag as used in DRAFT DO-IT Video Search Update



Resources

- My blog: Accessible Documents in HTML, Word, and PDF
 - <http://tinyurl.com/ttdocs>
- WebAIM
 - Creating accessible Microsoft Word docs
<http://www.webaim.org/techniques/word>
 - PDF Accessibility
<http://www.webaim.org/techniques/acrobat/>
- California State University PDF Tutorials
 - <http://tinyurl.com/y2dnyl2>

Resources

- Adobe Accessibility:
 - <http://www.adobe.com/accessibility/>
- DO-IT
<http://washington.edu/doit>
- AccessComputing
<http://washington.edu/accesscomputing>
- These slides
<http://staff.washington.edu/tft>

Questions?

