

Accessibility

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Outline

Introduction what is accessibility

Guidelines and techniques

Evaluation is this accessible?

Assistive Technologies and resources



Definition: Accessibility

Web accessibility means that people with disabilities can use the Web. More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging.

— W3C

References:

Microcentre. University of Dundee: <http://alpha.mic.dundee.ac.uk/ac~d/research/>

TRACE Centre. University of Wisconsin: - W-+n: / .Ltrace. wisc. edu

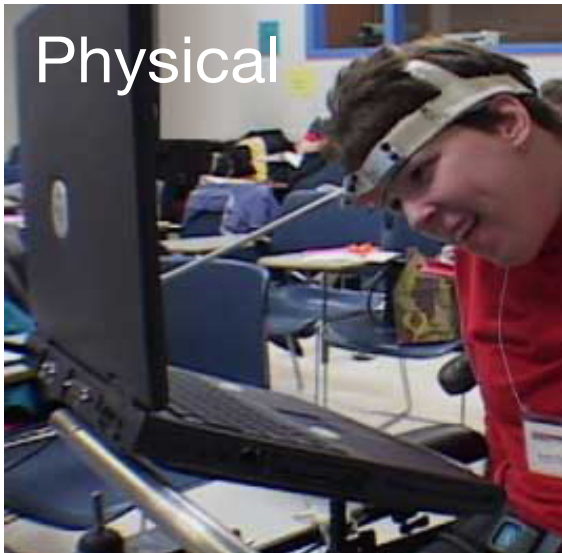
CALL Centre, University of Edinburgh: <http://callcentre.cogsci.ed.ac.uk/Ca11Home>

IRV. Netherlands: <http://www.tno.nl/expert/inst/irv.html>

ASEL. University of Delaware: <http://www.aseledel.edu/>

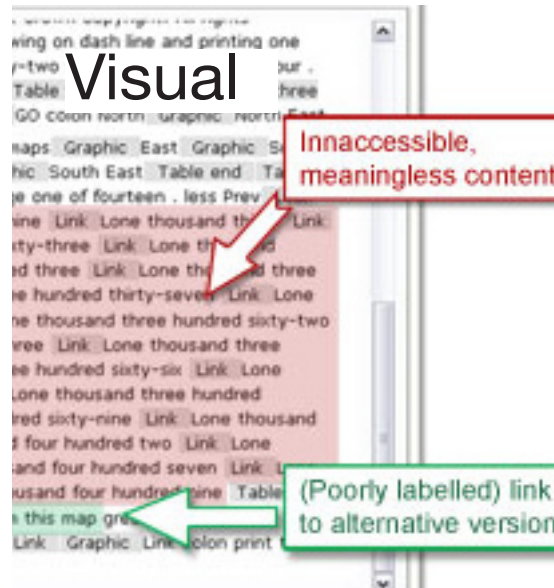
Disabilities to address

Physical



Cognitive

Visual



Speech

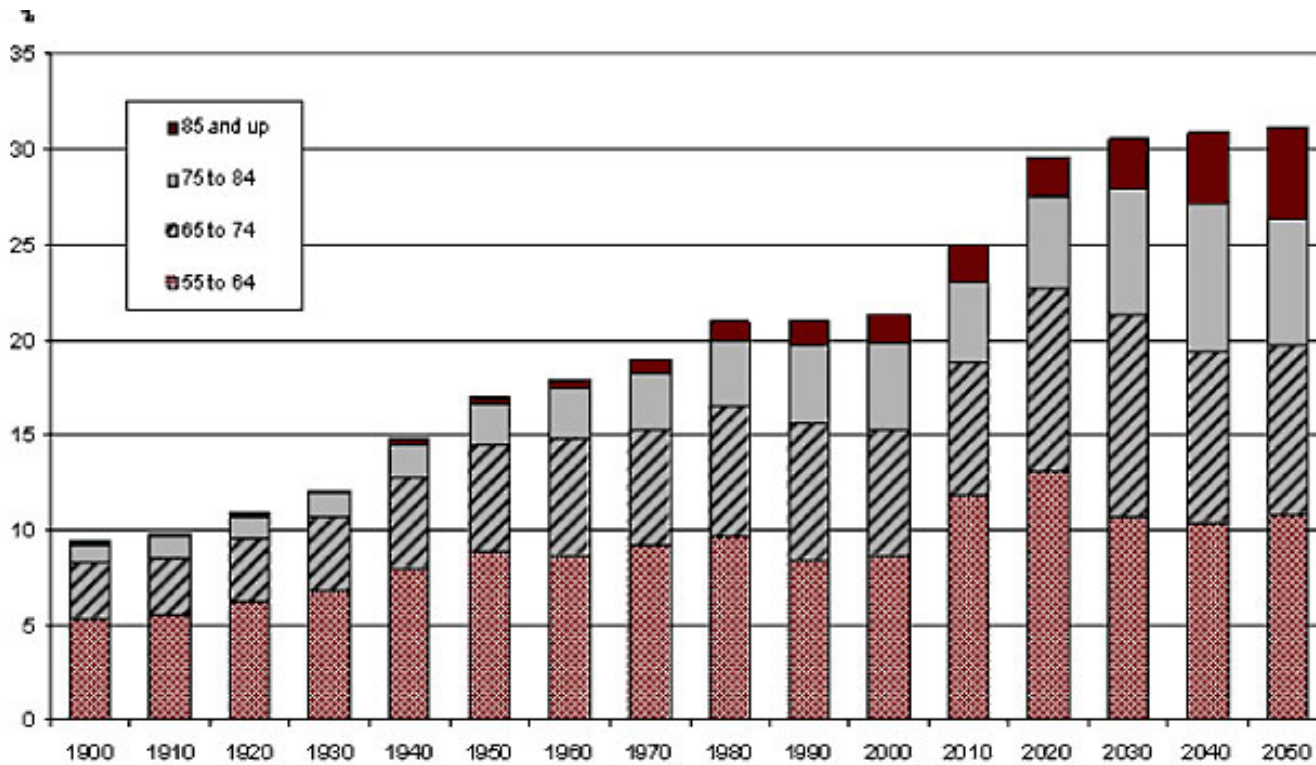
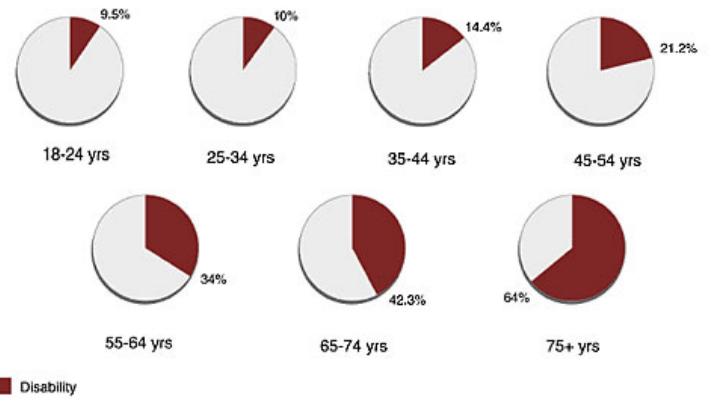
Auditory



acquiring reading and writing skills in years 7 through 10

Neurological






Elderly



Example : Alt Text






```

```

Day	Mon	Tues	Wed	Thur	Fri
Outlook					
High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

Day	Mon	Tues	Wed	Thur	Fri
Outlook	sunny	partly cloudy	IMAGE	rain	snow
High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

Example : Alt Text

Day	Mon	Tues	Wed	Thur	Fri
Outlook					
High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

Outlook

[sunny.]

[partly cloudy.]

[Image with not alt text: <http://images.acmesite.com/images/Proj%202079436/x-locale/common.forecast/H.1--NS/0/thunder.gif>]

[rain.]

[snow.]

High (°C)

Designing for Disability

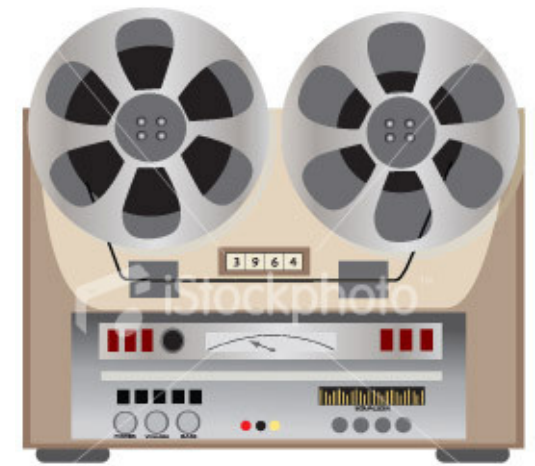


"Using the Internet to find the next black run!"

“The designers of human machine interfaces have to be far more inventive and original when they are trying to cope in an effective and efficient manner with the problems presented by the interfaces for people with disabilities. Indeed this has led to the phenomenon of a number of very successful designs, initially targeted at people with disabilities, providing major advances for everyone.”

Human Computer Interaction for People with Disabilities
Newell and Gregor.
Handbook of Human-Computer Interaction.

Example



“The cassette tape recorder was originally designed because blind people could not cope with the reel-to-reel tape recorders on which they had to play their talking books.”

Newell and Gregor



Components

1. Content

The information in a Web page or Web application: natural information such as text, images, and sounds code or markup that defines structure, presentation, etc.

2. Web browsers, media players, and other “user agents”

3. Assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.

4. Users’ knowledge, experiences, and in some cases, adaptive strategies using the Web



Components

5. Developers

Designers, coders, authors, etc., including developers with disabilities and users who contribute content

6. Authoring tools

Software that creates Web sites

7. Evaluation tools

Web accessibility evaluation tools, HTML validators, CSS validators, etc.



WAI Guidelines and Techniques

WAI guidelines define how to implement alternative text for accessibility in the different components

Authoring Tool Accessibility Guidelines (ATAG) addresses authoring tools

Web Content Accessibility Guidelines (WCAG) addresses Web content, and is used by developers, authoring tools, and accessibility evaluation tools

User Agent Accessibility Guidelines (UAAG) addresses Web browsers and media players, including some aspects of assistive technologies

Best Practices

Authoring Tool Accessibility Guidelines (ATAG)

Skip to content | Change text size or colors

W3C Web Accessibility initiative

WAI: Strategies, guidelines, resources to make the Web accessible to people with disabilities

W3C Home

Web Accessibility Initiative (WAI) Home	<h3>Authoring Tool Accessibility Guidelines (ATAG) Overview</h3> <p>Quick links: ATAG 1.0, ATAG 2.0 Working Draft</p> <h3>Authoring Tool Accessibility Guidelines (ATAG)</h3> <p>Authoring tools are software and services that people use to produce Web pages and Web <u>content</u>. Types of authoring tools are listed below under "Who ATAG is for".</p> <p>The Authoring Tool Accessibility Guidelines (ATAG) documents define how authoring tools should help Web developers produce Web content that is accessible and conforms to the Web Content Accessibility Guidelines. The ATAG documents also explain how to make authoring tools accessible so that</p>
Introducing Accessibility	
Guidelines & Techniques	
Development Process	
Web Content (WCAG)	

Authoring Tool (ATAG)
1.0 technical
▪ ATAG 1.0
▪ Checkpoints

Page Contents

- [Authoring Tool Accessibility Guidelines \(ATAG\)](#)
- [Who ATAG is for](#)
- [What is in ATAG 1.0](#)
- [ATAG Versions: 1.0 and 2.0](#)
- [Who develops ATAG](#)

Best Practices

Web Content Accessibility Guidelines (WCAG)

W3C Recommendation

[\[contents\]](#) [\[checklist\]](#)



Web Content Accessibility Guidelines 1.0

W3C Recommendation 5-May-1999

This version:

<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>
([plain text](#), [PostScript](#), [PDF](#), [gzip tar file of HTML](#), [zip archive of HTML](#))

Latest version:

<http://www.w3.org/TR/WAI-WEBCONTENT>

Previous version:

<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990324>

Editors:

<http://www.w3.org/TR/WAI-WEBCONTENT/>

Best Practices

User Agent Accessibility Guidelines (UAAG)

[\[next chapter\]](#) [\[contents\]](#) [\[summary\]](#) [\[checklist\]](#) [\[linear checklist\]](#)



User Agent Accessibility Guidelines 1.0

W3C Recommendation 17 December 2002

This version:

<http://www.w3.org/TR/2002/REC-UAAG10-20021217/>

Latest version:

<http://www.w3.org/TR/UAAG10/>

Previous version:

<http://www.w3.org/TR/2002/PR-UAAG10-20021016/>

Editors:

for people W3C



Standards

(X)HTML Validation from the W3C for the pages content

CSS Validation from the W3C for the pages layout

At least WAI-AA (preferably AAA) compliance with the WAI's WCAG

Compliance with all guidelines from Section 508 of the US Rehabilitation Act

Access keys built into the HTML

Semantic Web Markup

A high contrast version of the site for individuals with low vision

Alternative media for any multimedia used on the site (video, flash, audio, etc)



WTAG 2.0 Guidelines

Perceivable

- Provide text alternatives for any non-text content so that it can be changed into other forms people need such as large print, braille, speech, symbols or simpler language
- Provide synchronized alternatives for multimedia
- Create content that can be presented in different ways (for example spoken aloud, simpler layout, etc.) without losing information or structure
- Make it easier for people with disabilities to see and hear content including separating foreground from background

Operable

- Make all functionality available from a keyboard
- Provide users with disabilities enough time to read and use content
- Do not create content that is known to cause seizures
- Provide ways to help users with disabilities navigate, find content and determine where they are

Understandable

- Make text content readable and understandable
- Make Web pages appear and operate in predictable ways
- Help users avoid and correct mistakes that do occur

Robust

- Maximize compatibility with current and future user agents, including assistive technologies

Helpful Tips

	Components Affected by Principle	Principle Example
Perceivable	Visual, Hearing, Touch, Transformability, Content vs. Style and Presentation	Color used to convey meaning
Operable	Input Methods, Interaction Methods, User Control over Timing and Time Limits, Error Recovery	Rollovers versus keyboard tabbing
Understandable	Meaning—Language, Alternative or Supplemental Representations	Graphics and / or animations to convey meaning
Robust	Functionality across Current and Future Technologies, Using Technologies According to Specification	Requiring a certain browser



Evaluation

1. Select a representative page sample
2. Examine pages using graphical browsers
3. Examine pages using specialized browsers
4. Use automated Web accessibility evaluation tools
5. Summarize obtained results



Tips for Content

Page organization

Use headings, lists, and consistent structure.
Use CSS for layout and style where possible.

Images & animations

Use the alt attribute to describe the function of each visual.
Image maps. Use the client-side map and text for hotspots.

Multimedia

Provide captioning and transcripts of audio, descriptions of video.

Hypertext links

Use text that makes sense when read out of context.
For example, avoid “click here.”



Tips for Content

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 the noframes element and meaningful titles.

Tables

Make line-by-line reading sensible.



Accessibility Principles

1. Hearing
2. Mobility/Motor
3. Cognitive
4. Seizure
5. Vision



1. Hearing Disabilities

Include any information conveyed by sound in text format as well.



2. Mobility Disabilities

Some people do not use a keyboard and/or mouse. Make sure your Web document is navigable by both keyboard and keyboard equivalent.

Position hyperlinks so that it is easy to get to the most important ones. Put the most important first



3. Cognitive Disabilities

Avoid dense paragraphs of text. Use lots of white space.

Use bulleted lists to simplify paragraphs.

Use short and simple sentences.

Avoid 'busy' screens. Space information out, so that there isn't too much in a small area.



4. Seizure Disabilities

Avoid flashing or blinking elements in your documents.


Avoid animated text that can make the words harder to read.



5. Vision Disabilities


- ▶ Use alternative text on all graphics.
- ▶ Use a reasonable font size. Minimum of 10 point.
- ▶ Separate columns with a wide blank space.
- ▶ Design tables so that they read sensibly line by line. Use a high contrast color scheme.
- ▶ Black text on white is ideal.
- ▶ Never put two colors of similar contrast next to each other.
- ▶ Name hyperlinks sensibly. For example, do not use “to see more information check out this Link” or “Click here.”

Visability




home | personal solutions | business solutions | **about us** | press room

careers | contact us | aff



On-line Credit Reports, Credit Monitoring, Business Services - TransUnion



- Company Overview**

Preventing fraud. Creating options. Managing risk. Identifying customers. Discover all the benefits TransUnion brings to your bottom line.
- Capabilities & Markets**

Whether you're a corporate customer or an individual consumer, TransUnion offers products and services, as well as facilitating options and opportunities, which promote greater financial health.
- Global Presence**
- Industry Overview**

Read our [Company Overview](#) with Fast Facts, TransUnion's History and our notable innovations.
- TransUnion Public Policies**

To learn more about the industries we serve and the ways in which we are uniquely positioned to serve them, see [Capabilities & Markets](#).

Understand the crucial role the credit reporting industry plays in economic development in [Industry Overview](#).

Nearly every credit-based purchase is made possible by fast access to consumer information. Credit reporting is a necessary part of the global economy. However, accuracy and security are crucial. Learn more in TransUnion's [Public Policies](#).



On-line Credit Reports, Credit Monitoring, Business Services: More - TransUnion



- Company Overview**

Preventing fraud. Creating options. Managing risk. Identifying customers. Discover all the benefits TransUnion brings to your bottom line.
- Capabilities & Markets**

Whether you're a corporate customer or an individual consumer, TransUnion offers products and services, as well as facilitating options and
- Global Presence**
- Industry Overview**
- TransUnion Public Policies**

Visability

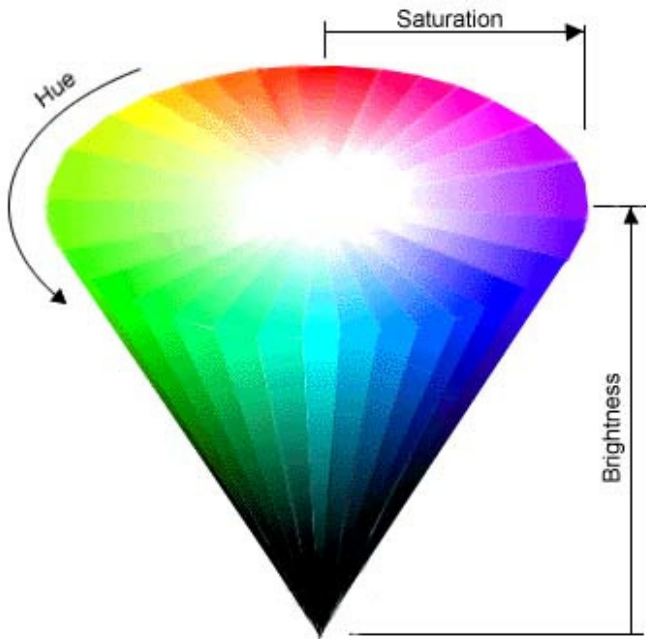
The image shows a screenshot of the TransUnion website. At the top, there is a navigation bar with links for home, personal solutions, business solutions, about us, press room, careers, and contact. Below this is a header section with the TransUnion logo and a main heading: "On-line Credit Reports, Credit Monitoring Business Services & More - TransUnion".

The main content area is divided into two columns. The left column contains a vertical navigation menu with the following items: Overview, Capabilities & Markets, and Global Presence. The right column contains the main body of text, which includes a sub-heading "Company Overview" and several paragraphs of text describing the company's services and mission. The text includes phrases like "Preventing fraud. Creating options. Managing risk. Identifying customers. Discover the benefits TransUnion brings to your bottom line." and "Whether you're a corporate customer or an individual consumer, TransUnion offers products and services, as well as facilitating options and opportunities, which promote greater financial health."

At the bottom of the page, there is a footer with copyright information: "© 2005-2006 TransUnion LLC. All Rights Reserved." and a "Privacy Policy" link.

Color

HUE varies around the solid
LIGHTNESS varies from top to bottom
SATURATION is the distance from the center.



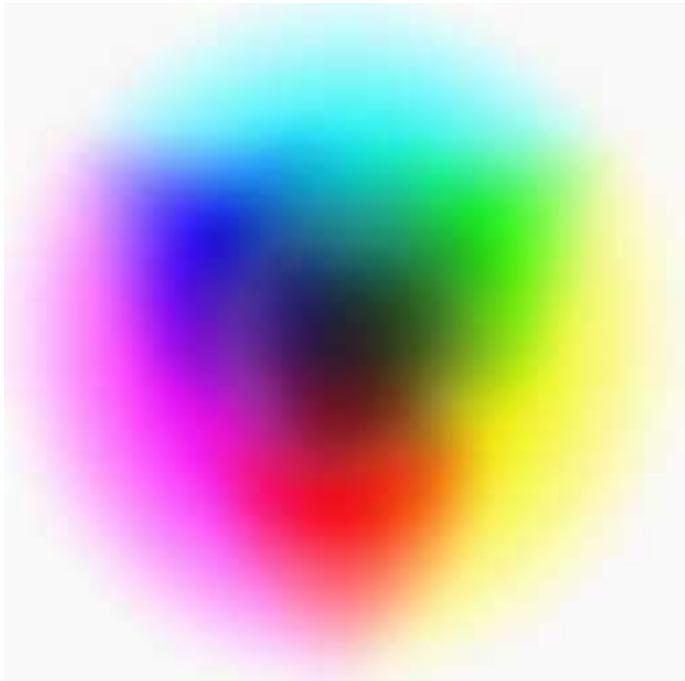
Hue

HUE is 'pure' color without the addition of white or black



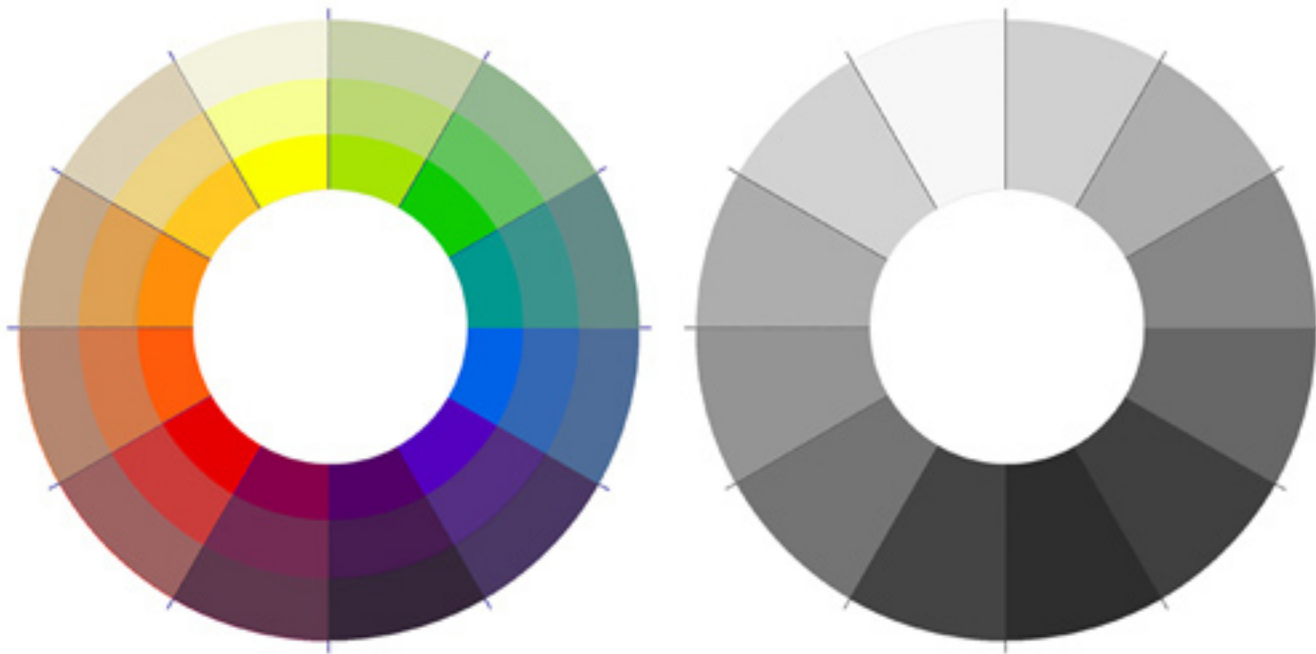
Lightness

LIGHTNESS reflects the perception of a color's brightness (also known as value)

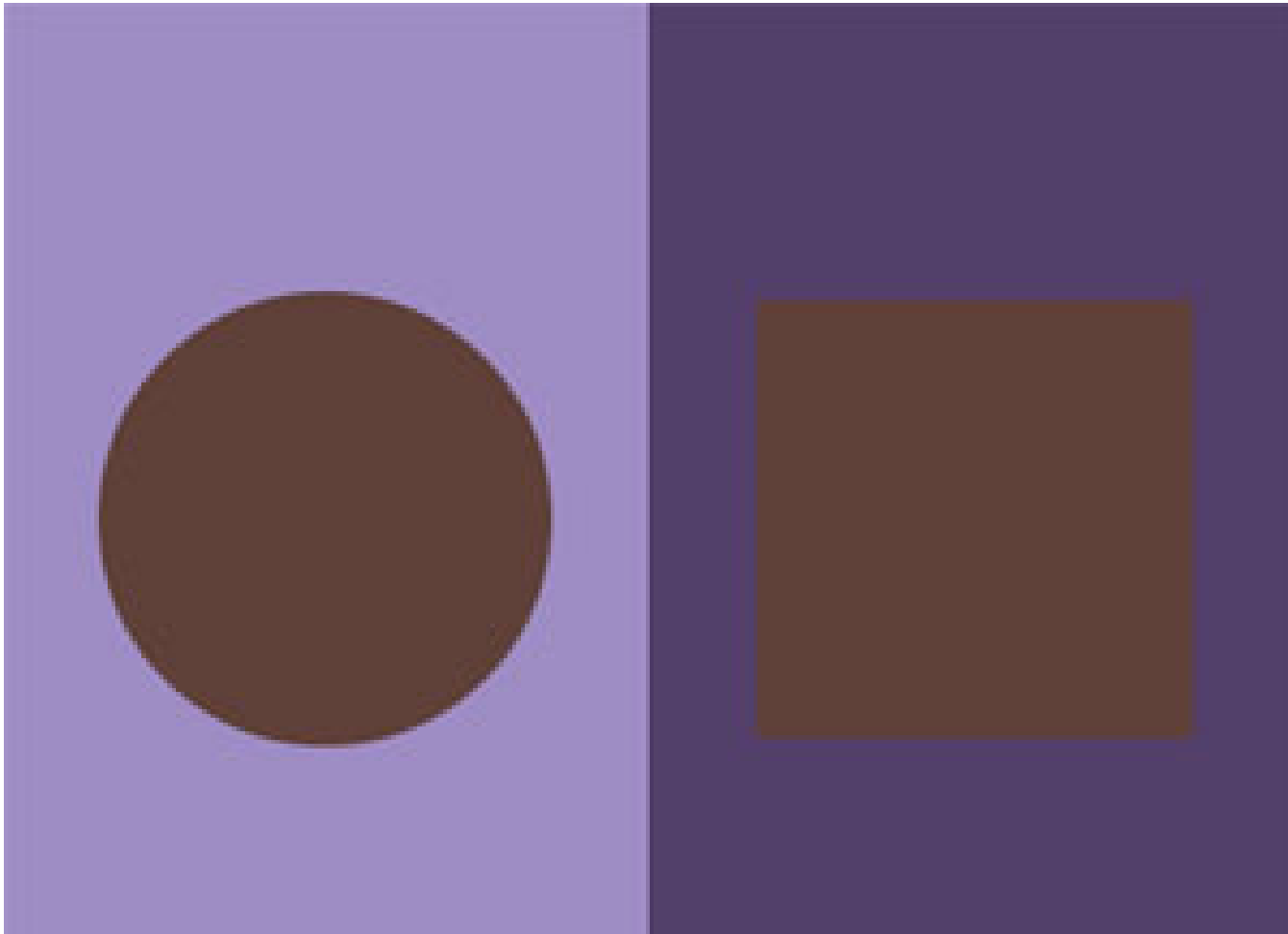


Saturation

SATURATION the colorfulness or intensity of a color

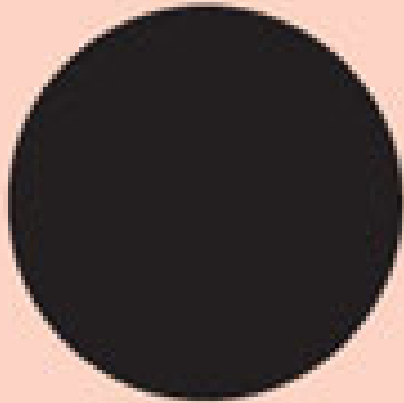


Color attributes?

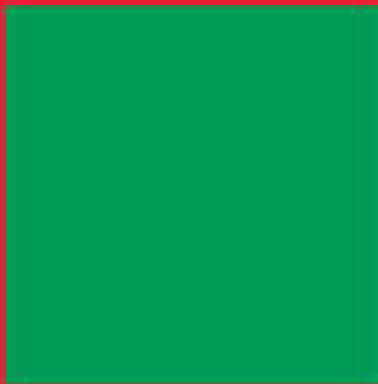




Color attributes



Effective



**Not as
effective**



Color attributes



Effective



**Not as
effective**



Color attributes



Effective



**Not as
effective**

First-Level VoiceOver Commands

Press Control-Option with the designated key

Cancel mode esc	Application summary F1	Window summary F2	VoiceOver cursor F3	Keyboard focus F4	Mouse focus F5	Selection description F6	VoiceOver menu F7	VoiceOver Utility F8	F9	Title visuals F10	Hide visuals F11	F12	⌘	
Move window ~	Go to Bookmark] [2	3	4	5	6	7	8	9	0	-	=	delete	
Fast through tab	Q	Read word W	E	Row in table R	Text attributes T	Y	URL, list U	Item list I	O	Read paragraph P	Back in VO history [Forward in VO history]	Open/close disclosure triangle ⌵	
caps lock	Read contents of VO cursor A	Read sentences S	Dock D	F	G	Help H	Jump to linked item J	Keyboard practice K	Read line L	Control-Option lock ;	,	.	return	
shift	Repeat last output Z	X	Read character C	Verbosity mode V	B	N	Menu bar M	,	.	/			shift	
fn	ctrl	option	⌘	⌘								Previous item page A	Next item page Y	Next word end >

■

 VoiceOver Activation keys

■

 Orientation and Help

■

 Navigation

■

 Text and Reading

■

 Settings and Visuals

■

 Operation keys

■

 Manipulation

Screen Reader

“You can learn it through exploration”

Mac VoiceOver is built into the operating system and works standard key commands and shortcuts like Command-S for Save and Command-C for copy.”

Let’s hear it in action!



What Are Remaining Challenges?



Remaining Challenges

► Challenge for Blind

Only true headings (<h1>) and lists will convey semantic meaning to a screen reader user.

Solution

Tag all headings so they are true headings. Tag all lists as ordered or unordered lists.

► Challenge for Blind

Images must include an alternative description (alt text) to be meaningful to a screen reader user.

Solution

Right-click on the selected image and select Properties from the menu. Click on the Tag tab and type the appropriate alt text in the field labeled Alternate Text. While in TouchUp Reading Order, Right-click on the image and choose Edit Alternate Text.