

The Web is for Everyone

An Introduction to Accessibility





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@jkup

Today we'll be covering

- Types of disabilities
- Assistive technologies
- Keyboard Navigation
- Focus Control
- Working with screen readers
- Semantic HTML
- WAI-ARIA
- Accessibility in color and design

Similar Fields





web*performance*





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.

**Let's Talk
Numbers**

One in six Americans (17%), 45 years of age or older, representing 16.5 million middle-age and older adults, report some form of vision impairment even when wearing glasses or contact lenses

An estimated 7.9 million persons
(age 6 and older) have difficulty
seeing words and letters in
ordinary newspaper print

About 15 percent of the world's population – some 785 million people – has a significant physical or mental disability

The Web is

Already Accessible

even if your website is not

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

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on the browser you are using

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A list of W3 project components and their current state. (e.g. [Line Mode](#) , [X11 Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#) , [Mail robot](#) , [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

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[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

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1991

Why Developers should care

- We're making it inaccessible
- Human Rights
- Legal Issue
- Reach a larger audience

WebAIM Checklist

Text Alternatives: Provide text alternatives for any non-text content

Success Criteria	WebAIM's Recommendations
<p><u>1.1.1 Non-text Content</u>  (Level A)</p>	<ul style="list-style-type: none"><input type="checkbox"/> All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.<input type="checkbox"/> Images that do not convey content, are decorative, or contain content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text.<input type="checkbox"/> Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page.<input type="checkbox"/> Form buttons have a descriptive value.<input type="checkbox"/> Form inputs have associated text labels.<input type="checkbox"/> Embedded multimedia is identified via accessible text.<input type="checkbox"/> Frames are appropriately titled.

All websites should be

P	Perceivable
O	Operable
U	Understandable
R	Robust

Types of Disabilities

- Attention-Deficit/Hyperactivity Disorders
- Blindness or Low Vision
- Brain Injuries
- Deaf/Hard-of-Hearing
- Learning Disabilities
- Physical Disabilities
- Speech and Language Disabilities

So Many Ways To Browse The Web

*Screen Readers
Mouth Sticks*

*Keyboard shortcuts
Magnification*

Keyboard Only



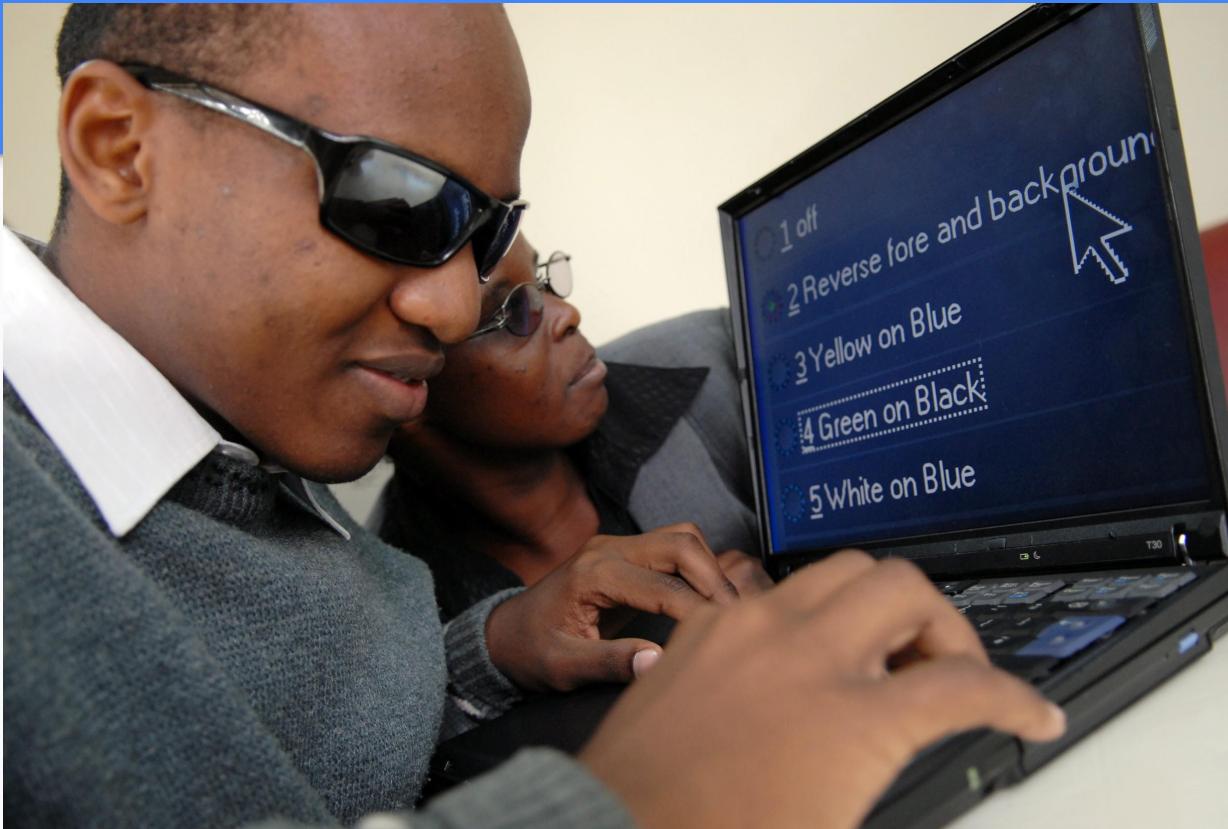
Head Wand and Mouthstick



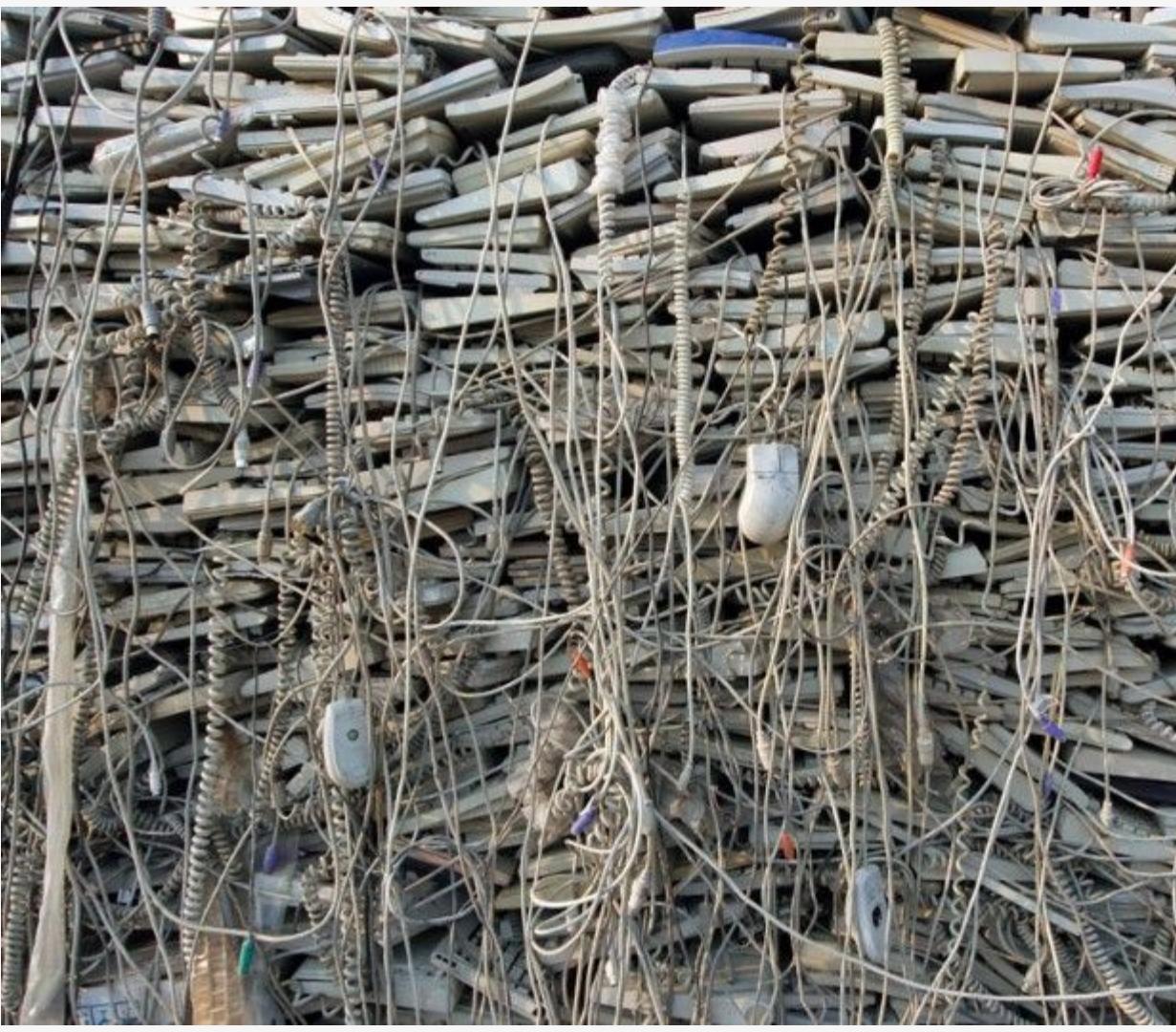
Single Switch



Screen Reader

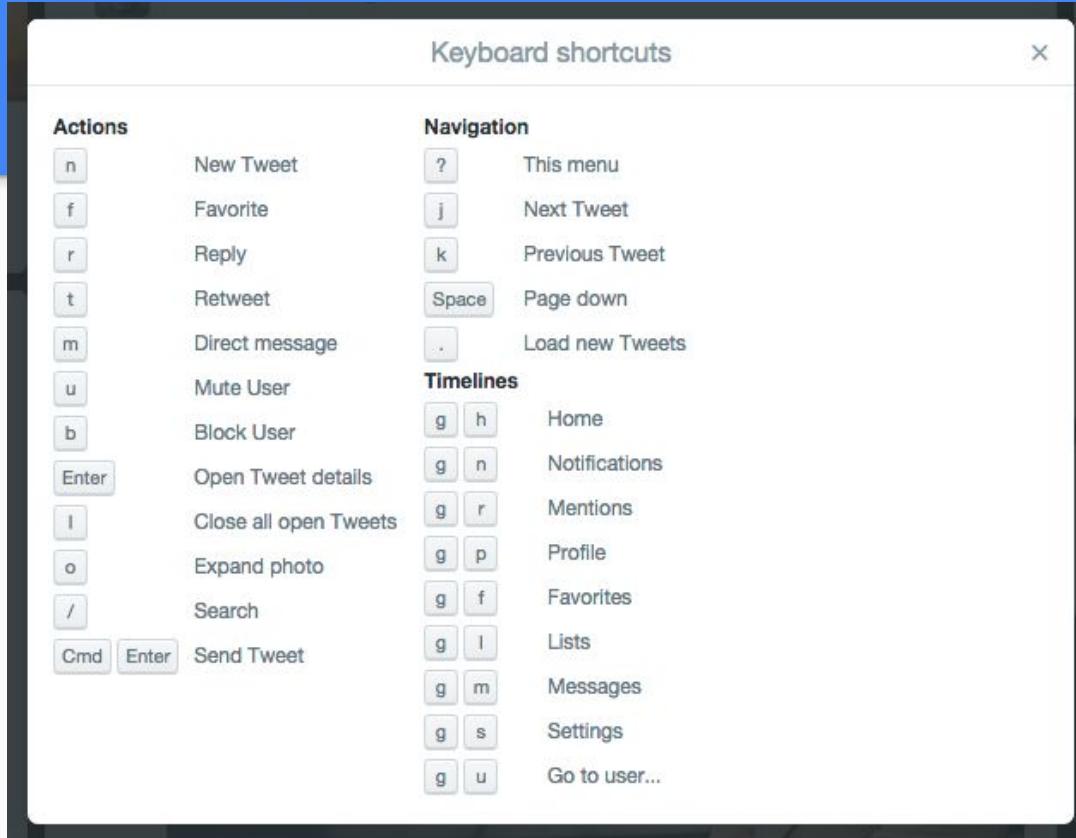


Let's talk about Keyboards



Keyboard shortcuts

Twitter



Facebook

Keyboard Shortcuts

News Feed

- j and k - Scroll between News Feed stories
- enter/return - See more of the selected story
- p - Post a new status
- l - Like or unlike the selected story
- c - Comment on the selected story
- s - Share the selected story
- o - Open an attachment from the selected story
- / - Search
- q - Search chat contacts
- ? - Open a list of these keyboard shortcuts while in News Feed

Web Messenger:

- CTRL + g - Search conversations
- CTRL + q - Show/hide keyboard shortcuts
- CTRL + Delete - Archive/unarchive conversation
- CTRL + j - Mark as spam
- CTRL + m - Start a new message
- CTRL + i - Go to Inbox
- CTRL + u - Go to Other



jkup / shortcut

Unwatch ▾ 8

Star 140

Fork 14

Code

Issues 3

Pull requests 0

Wiki

Pulse

Graphs

Settings

A keyboard shortcut library — Edit

19 commits

1 branch

0 releases

3 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Find file

Clone or download ▾

jkup Merge pull request #13 from kloots/firefox-support ...

Latest commit 7b0d113 on May 29, 2015



test [fixed #12] use charCode property of keypress event

a year ago



.gitignore adding jasmine testing and travis-ci

2 years ago



.travis.yml remove deprecated grunt task from travis-ci file

2 years ago



CONTRIBUTING.md added uglify and contribution file

2 years ago



Gruntfile.js Refactor activeElement code #8

2 years ago

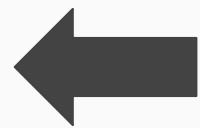


LICENSE Initial commit

2 years ago

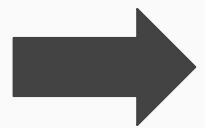
Keyboard navigation

Tabbable Elements



Shift + Tab

Tab



- <a>
- <button>
- <input>
- <select>
- <textarea>
- <iframe>

Tabindex

```
<div tabindex="0">I'm focusable</div>
```

Tabindex Values

- a **negative value** means that the element should be focusable, but should not be reachable via sequential keyboard navigation;
- **0** means that the element should be focusable and reachable via sequential keyboard navigation, but its relative order is defined by the platform convention;
- a **positive value** means should be focusable and reachable via sequential keyboard navigation; its relative order is defined by the value of the attribute: the sequential follow the increasing number of the tabindex. If several elements share the same tabindex, their relative order follows their relative position in the document.

tabindex



IN THIS ARTICLE



 Note: The maximum value for tabIndex should not exceed 32767 per W3C section 17.11.1

Skip links

≡ SECTIONS  SEARCH [SKIP TO NAVIGATION](#)

U.S. INTERNATIONAL 中文 ESPAÑOL

The New York Times

Sunday, July 24, 2016 | [Today's Paper](#) | [Video](#) |  98°F | Nasdaq  +0.52% ↑

World U.S. Politics N.Y. Business Opinion Tech Science Health Sports Arts Style Food Travel

```
1  <a href="#maincontent" class="skip-link">
2      Skip to main content
3  </a>
4  ...
5  <div class="navigation">
6      <!-- Your Navigation -->
7  </div>
8  ...
9  <div id="maincontent" tabindex="-1">
10     <!-- Main Content Goes Here -->
11 </div>
12
```

```
28
29 ⊜ #skip-link {
30     position: absolute;
31     top: -40px;
32     left: 0;
33     background: red;
34     color: white;
35     padding: 8px;
36     z-index: 9999;
37 }
38
39 ⊜ #skip-link:focus {
40     top: 0;
41 }
42
```

Learn more about skip links

webaim.org/techniques/skipnav/

Guideline 2.4

Navigable: Provide ways to help users navigate, find content, and determine where they are

Success Criteria	WebAIM's Recommendations
<p><u>2.4.1</u> <u>Bypass</u> <u>Blocks</u>  (Level A)</p>	<ul style="list-style-type: none"><input type="checkbox"/> A link is provided to skip navigation and other page elements that are repeated across web pages.<input type="checkbox"/> If a page has a proper heading structure, this may be considered a sufficient technique instead of a "Skip to main content" link. Note that navigating by headings is not yet supported in all browsers.<input type="checkbox"/> If a page uses frames and the frames are appropriately titled, this is a sufficient technique for bypassing individual frames.

Guideline 3.2

Predictable: Make Web pages appear and operate in predictable ways

Success Criteria	WebAIM's Recommendations
<p>3.2.1 On Focus  (Level A)</p>	<ul style="list-style-type: none"><li data-bbox="566 375 1564 556"><input type="checkbox"/> When a page element receives focus, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user.
<p>3.2.2 On Input  (Level A)</p>	<ul style="list-style-type: none"><li data-bbox="566 619 1603 847"><input type="checkbox"/> When a user inputs information or interacts with a control, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time.

Setting up our project

github.com/jkup/learn-a11y

Exercise 1: Keyboard Navigation

github.com/jkup/learn-a11y

1. The form at the bottom can't be submitted with just a keyboard.
2. There is no “skip link” for tabbing straight into the content.

Guideline 2.1

Keyboard Accessible: Make all functionality available from a keyboard

Success Criteria	WebAIM's Recommendations
<u>2.1.1</u> <u>Keyboard</u> ➔ (Level A)	<ul style="list-style-type: none">□ All page functionality is available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing).□ Page-specified shortcut keys and accesskeys (accesskey should typically be avoided) do not conflict with existing browser and screen reader shortcuts.
<u>2.1.2 No Keyboard Trap</u> ➔ (Level A)	<ul style="list-style-type: none">□ <u>Keyboard focus</u> is never locked or trapped at one particular page element. The user can navigate to and from all navigable page elements using only a keyboard.
<u>2.1.3 Keyboard (No Exception)</u> ➔ (Level AAA)	<ul style="list-style-type: none">□ All page functionality is available using the keyboard.

Focus

Control

document.activeElement

```
var currentElement = document.activeElement;
```

Tabtrapping

- Select your modal
- Find and select all focusable children (<https://github.com/jkup/focusable>)
- Convert them to an Array
- Find the first and last tabbable item inside the modal
- Listen for keydown event
- Check to see if it's the tab key
- *Also check if shift is being held down*
- If moving forward and on the last item, focus the first item
- If moving backward and on the first item, focus the last item

Element.focus()

```
if (document.activeElement === firstTabStop) {  
    e.preventDefault();  
    lastTabStop.focus();  
}
```

Exercise 2: Focus Control

github.com/jkup/learn-a11y

1. When the modal appears, you are still able to tab through elements on the main page. Tabbable content should be restricted to the modal.
2. Both hitting the escape key as well as clicking outside the modal should close it.

Screen Readers

Most Popular Desktop Screen Readers

1. JAWS (Windows)
2. ZoomText (Mac and Windows)
3. Window-Eyes (Windows)
4. NVDA (Windows)
5. VoiceOver (Mac)
6. ChromeVox (Browser)



ChromeVox

offered by chrome.google.com

★★★★★ (600)

Developer Tools

76,971 users

+ ADD TO CHROME



x

OVERVIEW

REVIEWS

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The screenshot shows a Google search results page for the query "weather". The top result is a card for "Weather for San Francisco, CA" showing a high of 69°F and a low of 54°F, with a "Partly Cloudy" icon. Below this, there's a summary of the day's weather: Mon (68°/56°), Tue (64°/55°), Wed (63°/54°), and Thu (60°/54°). To the right of the weather summary is a sidebar for "Local Forecast Weather" from Ask.com, which includes a link to "Find Local Forecast Weather" and a note about great results for local forecast weather.

Search About 1,160,000,000 results (0.23 seconds)

Everything Weather for San Francisco, CA

Images **Maps** **Videos** **News** **Shopping** **Gmail** more +

Mon **Tue** **Wed** **Thu**

68° 56° 64° 55° 63° 54° 60° 54°

Detailed forecast: [The Weather Channel](#) Weather Underground - AccuWeather

National and Local Weather Forecast, Hurricane, Radar and Report [www.weather.com](#) Cached

33 minutes ago - The Weather Channel and weather.com provide a national and local weather forecast for cities, as well as weather radar, report and hurricane ...

10 Day Weather Forecast for Las ... [www.weather.com/weather/day/la...](#)

The Weather Channel - weather ... [www.weather.com/weather/.../interact...](#)

US Current Weather [www.weather.com/.../currentweather...](#)

The Weather Channel - weather ... [www.weather.com/weather/...](#)

More results from weather.com >

Weather Current Conditions & Forecasts for the San Francisco Bay ... [www.sfgate.com/weather/](#) Cached

G By Google

Compatible with your device

ChromeVox - Giving Voice to Chrome

The ChromeVox screen reader is an extension to Chrome that brings the speed, versatility, and security of Chrome to visually impaired users.

Unlike most accessibility software, it is built using only web technologies like HTML5, CSS and Javascript. ChromeVox was designed from the start to enable unprecedented access to modern web apps, including those that utilize W3C ARIA (Access to Rich Internet Applications) to provide a rich, desktop-like

Website

Report Abuse

Additional Information

Version: 53.0.2784.0

Updated: July 7, 2016

Size: 2.96MiB

Languages: See all 52

``

index.html

x

```
1 <html>
2 <head>
3     <title>Accessibility Demo</title>
4 </head>
5 <body>
6     
7 </body>
8 </html>
9
```

What your users hear

gwash.jpg, image

index.html

```
1 <html>
2 <head>
3     <title>Accessibility Demo</title>
4 </head>
5 <body>
6     
7 </body>
8 </html>
9 |
```

What your users hear

George Washington Portrait, image

```
index.html ×  
1  <!-- Flickr -->  
2    
3  
4  <!-- Facebook -->  
5    
6  
7  <!-- Twitter -->  
8    
9 |
```

Writing Good Alt Text

- Be accurate
- Be succinct
- Don't be redundant
- Don't use "image of" or "graphic of"

Interesting Alt text tips

- alt="" intentionally skip element
- alt="UPPERCASE" individually reads letters

Guideline 1.2

Time-based Media: Provide alternatives for time-based media

NOTE: If the audio or video is designated as an alternative to web content (e.g., an audio or sign language version of a web page, for example), then the web content itself serves as the alternative.

Success Criteria	WebAIM's Recommendations
<p><u>1.2.1 Prerecorded Audio-only and Video-only</u>  (Level A)</p>	<ul style="list-style-type: none"><li data-bbox="639 591 1560 721"><input type="checkbox"/> A descriptive text transcript (including all relevant visual and auditory clues and indicators) is provided for non-live, web-based audio (audio podcasts, MP3 files, etc.).<li data-bbox="639 737 1522 818"><input type="checkbox"/> A text or audio description is provided for non-live, web-based video-only (e.g., video that has no audio track).

Hiding things from screen readers

- `display: none;`
- `visibility: hidden;`
- `<input hidden />`

Hide from user but show to screen readers

```
.screenreader {  
    position: absolute;  
    left: -10000px;  
    width: 1px;  
    height: 1px;  
    overflow: hidden;  
}
```

label

```
<label for="username">Click me</label>  
<input type="text" id="username">
```

aria-labelledby

```
<div id="billing">Billing Address</div>

<div>
  <div id="name">Name</div>
  <input type="text" aria-labelledby="billing name"/>
</div>
<div>
  <div id="address">Address</div>
  <input type="text" aria-labelledby="billing address"/>
</div>
```

Guideline 3.3

Input Assistance: Help users avoid and correct mistakes

Success Criteria	WebAIM's Recommendations
<p><u>3.3.1 Error Identification</u>  (Level A)</p>	<ul style="list-style-type: none"><input type="checkbox"/> Required form elements or form elements that require a specific format, value, or length provide this information within the element's label.<input type="checkbox"/> If utilized, <u>form validation</u> errors are presented in an efficient, intuitive, and accessible manner. The error is clearly identified, quick access to the problematic element is provided, and user is allowed to easily fix the error and resubmit the form.
<p><u>3.3.2 Labels or Instructions</u>  (Level A)</p>	<ul style="list-style-type: none"><input type="checkbox"/> Sufficient labels, cues, and instructions for required interactive elements are provided via instructions, examples, properly positioned form labels, and/or fieldsets/legends.

ARIA Roles

5.3.3. Document Structure

The following *roles* describe structures that organize content in a page. Document structures are not usually interactive.

- [article](#)
- [columnheader](#)
- [definition](#)
- [directory](#)
- [document](#)
- [group](#)
- [heading](#)
- [img](#)
- [list](#)
- [listitem](#)
- [math](#)
- [note](#)
- [presentation](#)
- [region](#)
- [row](#)
- [rowgroup](#)
- [rowheader](#)
- [separator](#)
- [toolbar](#)

HTML5 elements vs ARIA roles

Sometimes it's nice to have both for older browsers

```
<article role="article">Your Content</article>
```

HTML5 elements vs ARIA roles

Which they will turn into

```
<div role="article">Your Content</div>
```

Exercise 3: Screen Reader

github.com/jkup/learn-a11y

1. Your task is to make it so the entire form can be filled out with only the use of a screen reader.

Semantic HTML

Understandable

Content and interface are understandable

Guideline 3.1

Readable: Make text content readable and understandable

Success Criteria	WebAIM's Recommendations
<u>3.1.1 Language of Page</u> ↗ (Level A)	<ul style="list-style-type: none">□ The language of the page is identified using the HTML lang attribute (<html lang="en">, for example).
<u>3.1.2 Language of Parts</u> ↗ (Level AA)	<ul style="list-style-type: none">□ The language of page content that is in a different language is identified using the lang attribute (e.g., <blockquote lang="es">).
<u>3.1.3 Unusual Words</u> ↗ (Level AAA)	<ul style="list-style-type: none">□ <u>Words</u> that may be ambiguous, unknown, or used in a very specific way are defined through adjacent text, a definition list, a glossary, or other suitable method.

There's an element
for that

Semantic Anti Patterns

- <div class="button"></div>
-
-

Elements with inherited functionality

Keyboard Interaction:

With focus on the button, pressing the Space key or Enter key activates the button. Focus should behave appropriately for the type of action being performed. For example:

- If activating the button opens a dialog, the focus moves inside the dialog. (see [dialog pattern](#))
- If activating the button closes a dialog, typically focus should return to the button that opened the dialog unless the function performed in the dialog context logically leads to a different element. For example, activating a cancel button in a dialog should always return focus to the button that opened the dialog. However, if the dialog is confirming a delete action that deletes the page from which it was opened, the focus must logically move to a new context.

HTML Headers (option + ctrl + u)

Headers

- 2 Only at the Apple Online Store
- 3 Accessorize your new gear.
- 4 Get the fastest iPhone ever.
- 4 Get free iPod laser engraving.
- 2 iTunes Movie Trailers
- 2 Hot News Headlines
- 3 iPod touch + Edu Apps = Happy Students
- 3 Camera Pro Preaches iPhone Photography
- 3 Global Mobile U
- 3 How the iPhone Could Reboot Education
- 3 30 Must-Have Games for iPhone and iPod touch
- 2 MobileMe
- 2 Video Tutorials
- 3 View Hundreds of Tutorials:
 - 3 Turn your photos into treasures with iPhoto.

Exercise 4: Semantic HTML

github.com/jkup/learn-a11y

1. Check the ARIA roles and see if you can find HTML5 elements to replace roles.
2. Make sure all items are using the proper elements.

Guideline 1.3

Adaptable: Create content that can be presented in different ways (for example simpler layout) without losing information or structure

Success Criteria	WebAIM's Recommendations
<u>1.3.1 Info and Relationships</u>  (Level A)	<ul style="list-style-type: none"><li data-bbox="581 373 1603 505"><input type="checkbox"/> <u>Semantic markup</u> is used to designate headings (<code><h1></code>), lists (<code></code>, <code></code>, and <code><dl></code>), emphasized or special text (<code></code>, <code><code></code>, <code><abbr></code>, <code><blockquote></code>, for example), etc. Semantic markup is used appropriately.<li data-bbox="581 516 1603 645"><input type="checkbox"/> <u>Tables</u> are used for tabular data. Where necessary, data cells are associated with their headers. Data table captions and summaries are used where appropriate.<li data-bbox="581 656 1603 743"><input type="checkbox"/> Text labels are associated with form input elements. Related form elements are grouped with <code>fieldset/legend</code>.
<u>1.3.2 Meaningful Sequence</u>  (Level A)	<ul style="list-style-type: none"><li data-bbox="581 805 1603 894"><input type="checkbox"/> The <u>reading and navigation order</u> (determined by code order) is logical and intuitive.

Robust

Content can be used reliably by a wide variety of user agents, including assistive technologies

Guideline 4.1

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

Success Criteria	WebAIM's Recommendations
<u>4.1.1</u> <u>Parsing</u>  (Level A)	<ul style="list-style-type: none"><input type="checkbox"/> Significant HTML/XHTML validation/parsing errors are avoided. Check at http://validator.w3.org/ 
<u>4.1.2</u> <u>Name, Role, Value</u>  (Level A)	<ul style="list-style-type: none"><input type="checkbox"/> Markup is used in a way that facilitates accessibility. This includes following the HTML/XHTML specifications and using forms, form labels, frame titles, etc. appropriately.

ARIA

Accessible Rich Internet Applications

ARIA Example

```
<span class="button">Click Me</span>
```

Add role

```
<span role="button" class="button">Click Me</span>
```

Add tabindex

```
<span tabindex="0" role="button" class="button">Click Me</span>
```

Add Interaction

```
<span  
    tabIndex="0" role="button" class="button"  
    onClick="btnClicked()" onKeyUp="btnClicked()>  
    Click Me  
</span>
```

aria-describedby

```
<button aria-label="Close" aria-describedby="descriptionClose"  
      onclick="myDialog.close()">X</button>  
  
...  
  
<div id="descriptionClose">Closing this window will discard any  
information entered and  
return you back to the main page</div>
```

ARIA CSS Selectors

```
.dropdown[aria-expanded="false"] .icon::after {  
    content: '▶';  
}  
  
.dropdown[aria-expanded="true"] .icon::after {  
    content: '▼';  
}
```

Live regions

- aria-live - off/polite/assertive
- aria-relevant - additions/removals/text/all

https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA/ARIA_Live_Regions

Exercise 5: Live Regions

github.com/jkup/learn-a11y

1. Write some JavaScript in aria.js to give increment and decrement functionality.
2. Use ARIA live regions so that screen readers announce when the count changes.

Color

Guideline 2.3

Seizures: Do not design content in a way that is known to cause seizures

Success Criteria	WebAIM's Recommendations	
<u>2.3.1 Three Flashes or Below Threshold</u>  (Level A)	<ul style="list-style-type: none"><li data-bbox="528 473 1584 602"><input type="checkbox"/> No page content <u>flashes</u> more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. (<u>See general flash and red flash thresholds</u> <u>2.3.2 Three Flashes</u>  (Level AAA)	<ul style="list-style-type: none"><li data-bbox="528 710 1315 739"><input type="checkbox"/> No page content flashes more than 3 times per second.





OVERVIEW

REVIEWS

SUPPORT

RELATED

[G+1](#)

29

The screenshot shows a web browser window displaying the BBC News homepage. A dark overlay titled "NoCoffee Vision Simulator" is overlaid on the page. The simulator includes several sliders and dropdown menus for adjusting visual impairments:

- Pervasive issues:**
 - Blur (low acuity): Set to 100%.
 - Contrast loss: Set to 0%.
 - Glare: Set to 0%.
 - Ghosting: Set to 0%.
 - Snow: Set to 0%.
 - Color deficiency: Set to "None".
- Blocked visual field:**
 - Normal (radio button selected).
 - Central (macular degeneration)
 - Peripheral (glaucoma, retinitis pigmentosa)
 - Comer (retinal detachment)
 - Large spots (diabetic retinopathy)
- Strength/size:** Set to 40%.

The BBC News homepage features a main banner about dark energy, a video player, and various news articles like "Tunisia PM Hamadi Jebali resigns" and "Huge blaze in US shopping district".

Compatible with your device

NoCoffee vision simulator

Vision problems are more pervasive than most of us realize. Upwards of 285 million people worldwide are visually impaired. Many more have low or moderate visual difficulties. The number in the U.S. is expected to double by 2020, due to the aging of the baby boomer generation.

NoCoffee can be helpful for understanding the problems faced by people with slight to extreme vision problems, such as:

- * Low Acuity: Some web pages use very small text or click targets. While it's true that

Website

Report Abuse

Additional Information

Version: 0.4.9

Updated: March 8, 2016

Size: 677KiB

Language: English (United States)

Exercise 6: Colors

github.com/jkup/learn-a11y

1. Experiment with our demo site and other sites.
2. What color schemes seem dangerous to use?

Guideline 1.4

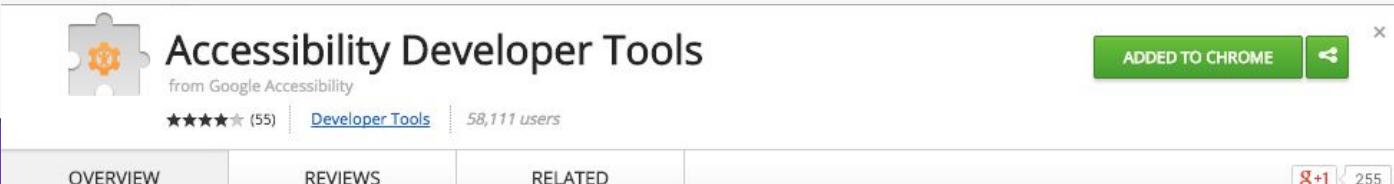
Distinguishable: Make it easier for users to see and hear content including separating foreground from background

Success Criteria	WebAIM's Recommendations
<u>1.4.1 Use of Color</u> ↗ (Level A)	<ul style="list-style-type: none"><li data-bbox="549 416 1422 494"><input type="checkbox"/> Color is not used as the sole method of conveying content or distinguishing visual elements.<li data-bbox="549 508 1591 681"><input type="checkbox"/> Color alone is not used to distinguish <u>links</u> from surrounding text unless the luminance contrast between the link and the surrounding text is at least 3:1 and an additional differentiation (e.g., it becomes underlined) is provided when the link is hovered over or receives focus.
<u>1.4.2 Audio Control</u> ↗ (Level A)	<ul style="list-style-type: none"><li data-bbox="549 751 1591 829"><input type="checkbox"/> A mechanism is provided to stop, pause, mute, or adjust volume for audio that automatically plays on a page for more than 3 seconds.

TOOLS

For Accessibility Testing

Chrome Extension



The screenshot shows the 'Accessibility Developer Tools' extension page on the Chrome Web Store. The page includes a green 'ADDED TO CHROME' button and a share icon. Below the header, there's a star rating of 4.5 stars from 55 reviews and 58,111 users. The main content area has tabs for 'OVERVIEW', 'REVIEWS', and 'RELATED'. A preview window shows a screenshot of a web browser displaying the guardiannews.com homepage with the extension's audit results overlaid.

Accessibility audit and element properties.

This extension will add an Accessibility audit, and an Accessibility sidebar pane in the Elements tab, to your Chrome Developer Tools.

To use the audit: go to the Audits tab, select the Accessibility audit, and click Run. The audit results will appear as a list of rules which are violated by the page (if any), with one or more elements on the page shown as a result for each rule.

To use the sidebar pane: inspect an element in the Elements tab, then expand the Accessibility sidebar pane (note that it may

Report Abuse

Version: 2.10.0
Updated: November 12, 2014
Size: 59.57KB
Language: English

preventDefault vs. stopPropagation vs. stopImmediatePropagation

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Elements Network Sources Timeline Profiles Resources Audits Console

✖️ ⚙️ □ ×



RESULTS

 http://codeplanet.io/ (1)

▼ Accessibility

- ▼ [Severe] Controls and media elements should have labels (2)

See [AX TEXT_01](#) for more information.

```
<textarea wrap="soft" class="crayon-plain print-no" data-settings="dblclick" readonly style="tab-size: 4; font-size: 14px !important; line-height: 20px !important; z-index: 0; opacity: 0; overflow: hidden;">$foo = 3 # Global 3  
$BAR = 10 # Global 10</textarea>  
► <textarea wrap="soft" class="crayon-plain print-no" data-settings="dblclick" readonly style="tab-size: 4; font-size: 14px !important; line-height: 20px !important; z-index: 0; opacity: 0; overflow: hidden;">...</textarea>
```

- ► [Warning] Meaningful images should not be used in element backgrounds (6)

- ► [Warning] Text elements should have a reasonable contrast ratio (35)

- ► [Warning] The purpose of each link should be clear from the link text (5)

- ► [Warning] These elements are focusable but either invisible or obscured by another element (7)

- ► Not applicable tests (7)

- ► Passing tests (5)

Search ...



CodePlanet is a site aimed at software developers and designers. We offer blog posts, screencasts and tutorials on a wide range of topics including PHP, JavaScript, Go,

▼ Accessibility

● ▼ [Severe] Controls and media elements should have labels (2)

See [AX TEXT 01](#) for more information.

```
<textarea wrap="soft" class="crayon-plain print-no" data-settings="dblclick" readonly style="tab-size: 4; font-size: 14px !important; line-height: 20px !important; z-index: 0; opacity: 0; overflow: hidden;">$foo = 3 # Global 3  
$BAR = 10 # Global 10</textarea>
```

```
► <textarea wrap="soft" class="crayon-plain print-no" data-settings="dblclick" readonly style="tab-size: 4; font-size: 14px !important; line-height: 20px !important; z-index: 0; opacity: 0; overflow: hidden;">...</textarea>
```

● ► [Warning] Meaningful images should not be used in element backgrounds (6)

● ► [Warning] Text elements should have a reasonable contrast ratio (35)

● ► [Warning] The purpose of each link should be clear from the link text (5)

● ► [Warning] These elements are focusable but either invisible or obscured by another element (7)

● ► Not applicable tests (7)

● ► Passing tests (5)

Tenon.io

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ENTER A WEBSITE URL OR <HTML> TO TEST YOUR SITE'S ACCESSIBILITY

1

ex: `<p>Hello world</p>` or <http://google.com>

[Show Options](#)

[Submit Your Test](#)

6 issues found for <http://codeplanet.io>

⌚ Processed in 2.91sec

Screen Size: 1024w x 768h

Page size: 26kb

6 total
4 errors
2 warnings

Error

Description

```
<p style="text-align: center;"><input type="button" name="vote" value=" Vote " class="Buttons" onclick="poll_vote(3);"></p>
```

Test ID 76

 **Error** / priority 87%
Empty paragraph found

(line: 289, 0)

Web Content Accessibility Guidelines (WCAG) 2.0, Level AA:
1.4.5 Images of Text

A paragraph was found without text in it. While this tends to have a low severity, it does create an unnecessary nuisance for users of screen readers who are likely to hear the announcement of the empty paragraph as they navigate through content. If this empty paragraph exists to behave as margin, use CSS for this purpose instead.

 Recommended Fix

```
<textarea wrap="soft" class="crayon-plain print-no" data-settings="dblclick" readonly style="height: 20px !important; opacity: 0; ov
```

 **Error** / priority 90%
Form element has no label



ADD-ONS

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[Home](#) » [Extensions](#) » Accessibility Evaluation Toolbar

Accessibility Evaluation Toolbar 1.5.7.1.1-signed

by [Jon Gunderson](#)

Support web developers in testing web resources for accessibility features.

[+ Add to Firefox](#)

15 user reviews

8,287 users

[Add to collection](#)[Share this Add-on](#)

About this Add-on

* The tool supports web developers in testing their web resources for functional accessibility features based on the iCITA

[Add-on home page](#)[Support site](#)

List of Accessibility Issues

FAE Rule	Violations	Message
Warn	1	The words contained in each h1 element should match a subset of the words contained in the title ...
Warn	1	Every img element that is less than 8 pixels high or 8 pixels wide OR has an empty alt attribute val...
Warn	1	The character encoding was not specified.
Check	3	Heading content should be concise (usually 65 or fewer characters in length).
Warn	3	Each map, ul or ol element that precedes the last h1 element and appears to be a navigation bar s...
Warn	5	Avoid using text links that are shorter than four 4 characters in length.
Warn	5	Ensure that links that point to different HREFs use different link text.
Fail	8	The page should contain at least one and no more than two h1 elements.
Warn	17	Ensure that links that point to the same HREF use the same link text.

Options

- Remove 0 Frequency
- Remove Not Applicable (NA)

[Move To](#)[Rationale](#)[View Summary](#)[Refresh](#)[Data Dump](#)[Close Window](#)

Summaries. preventDefault: Cancels the event if it is cancellable, without stopping further propagation of the event. stopPropagation: Prevents further

about?



ADD-ONS

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WAVE Toolbar 1.1.6.1-signed

by [WebAIM](#)**WAVE Web Accessibility Evaluation Toolbar**[+ Add to Firefox](#)[Privacy Policy](#)This add-on has been preliminarily reviewed by Mozilla. [Learn more](#)

21 user reviews

5,099 users

[Add to collection](#)[Share this Add-on](#)[About this Add-on](#)[Add-on home page](#)



Code Planet Logo



h1

preventDefault vs. stopPropagation vs. stopImmediatePropagation

Posted on May 19, 2015



Three similar and often confused methods. Let's explore the different between:
`Event.preventDefault()` `Event.stopPropagation()`
`Event.stopImmediatePropagation()` Summary First off, let's check out the MDN



Search ...



title



WAI-ARIA



eye



ALERT: Invisible content
Content is hidden using CSS
display:none or visibility:hidden.



g+



all



Youtube



Google+



Accessible Color Palette

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NC State University IT Accessibility Resources

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Create a Color Palette Accessibility Evaluator

Create a tool that allows you to analyze any combination of colors from a palette to see which combinations meet WCAG 2 accessibility specifications.

1st

Start by entering the colors in your palette.

Color codes

List each color in the palette you would like to analyze, either one per line or in a comma-separated list. Use the formula **RRGGBB**, or the abbreviated **RGB**. For example, for green you would enter "00ff00" without the quotes. **You must enter more than one color.** It is also helpful to include black (000000 or 000) and white (ffffff or fff).

2nd

Choose the conformance level to use.

Color codes

List each color in the palette you would like to analyze, either one per line or in a comma-separated list. Use the formula **RRGGBB**, or the abbreviated **RGB**. For example, for green you would enter "00ff00" without the quotes. **You must enter more than one color.** It is also helpful to include black (000000 or 000) and white (ffffff or fff).

2A363B
ED4860

2nd

Choose the conformance level to use.

Conformance Level: _____

Please select which WCAG 2 conformance level you would like to use. Level AA is most likely going to become the new standard for Federal Web accessibility.

- Level AA**
- Level AAA**

Color Palette



Select a color to analyze



[2A363B](#)



[ED4860](#)

[Back to palette creator](#)

Analysis

Small Non-Bold Text (less than 18pt, or approximately 1.5em rendered) for ED4860

Color Code	Sample Text	Sample Text (inverted)	Pass or Fail	Ratio (pass>=4.5)
2A363B	Lore m ipsum	Lore m ipsum	FAIL	3.37

Large Non-Bold Text (18pt or greater, or approximately 1.5em rendered) for ED4860

Color Code	Sample Text	Sample Text (inverted)	Pass or Fail	Ratio (pass>=3.0)
2A363B	Lore m ipsum	Lore m ipsum	PASS	3.37

Medium Bold Text (14pt or greater and bold, or approximately 1.2em rendered) for ED4860

Color Code	Sample Text	Sample Text(inverted)	Pass or Fail	Ratio (pass>=3.0)
2A363B	Lore m ipsum	Lore m ipsum	PASS	3.37

on github



tota11y

an accessibility visualization toolkit

from your friends at



the following best practices.

Headings
Highlights headings (`<h1>`, `<h2>`, etc) and order violations

Contrast
Labels elements with insufficient contrast

Link text
Identifies links that may be confusing when read by a screen reader

Labels
Identifies inputs with missing labels

Image alt-text
Annotates images without alt text

Landmarks
Labels all ARIA landmarks

works

a single JavaScript file that inserts a small button in the bottom right corner of your document. (It's on this very

ear consists of several plugins that each provide functionality

Contrast

Insufficient contrast ratio (3.17 < 4.5) 

The color combination #888888/#f2f2f2 has a contrast ratio of 3.17, which is not sufficient. At this size, you will need a ratio of at least 4.5.

Consider using the following foreground/background combination:

#6f6f6f/#f2f2f2  has a ratio of 4.49

Insufficient contrast ratio (3.16 < 4.5) 

Errors 

[This repository](#) [Search](#)[Pull requests](#) [Issues](#) [Gist](#)[addyosmani / a11y](#)

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16



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459



Fork

18

Accessibility audit tooling for the web (alpha) <http://addyosmani.github.io/a11y/>

132 commits

3 branches

11 releases

8 contributors



branch: master

a11y / +



Release v0.3.1.



addyosmani authored 16 hours ago

latest commit ea6b19e9f1



assets Add logo revisions

8 months ago



docs Tutorial formatting

6 months ago



test cli - show error message again when no input is supplied

6 months ago



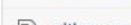
.editorconfig use `meow` and massively simplify the code

8 months ago



.gitattributes Add gitattribs

8 months ago



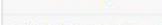
.gitignore Add git ignores

8 months ago



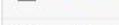
.travis.yml Update .travis.yml

4 months ago



README.md Close #37 PR: Add ability to resolve paths with glob.

3 months ago



audits.js Close #29 PR: Add support for delays.

6 months ago



cli.js simplify cli help creation

3 days ago



index.js cli - show error message again when no input is supplied

6 months ago

< Code

Issues

10

Pull requests

0

Pulse

Graphs

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You can clone with [HTTPS](#), [SSH](#), or [Subversion](#). [?](#)

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- ✖ Controls and media elements should have labels

```
#crayon-556874c640b7f071648274 > .crayon-plain-wrap > .crayon-plain.print-no  
#crayon-556874c640b8c693859590 > .crayon-plain-wrap > .crayon-plain.print-no
```

- ✖ These elements are focusable but either invisible or obscured by another element

```
#site-navigation > .screen-reader-text.skip-link > A  
#crayon-556874c640b7f071648274 > .crayon-plain-wrap > .crayon-plain.print-no  
#crayon-556874c640b8c693859590 > .crayon-plain-wrap > .crayon-plain.print-no  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(2)
```

- ✖ The purpose of each link should be clear from the link text

```
#masthead > .col-md-10.col-md-offset-1 > .site-title > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(2)  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(3)  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(4)
```

- ✖ Text elements should have a reasonable contrast ratio

```
#post-414 > .entry-header > .entry-meta > .posted-on > A > .entry-date.published  
#post-414 > .entry-header > .entry-meta > .byline > .author.vcard > .url.fn.n  
#post-414 > .entry-content > P > .read-more  
#post-410 > .entry-header > .entry-meta > .posted-on > A > .entry-date.published  
#post-410 > .entry-header > .entry-meta > .byline > .author.vcard > .url.fn.n
```

- ✓ This element does not support ARIA roles, states and properties
- ✓ Elements with ARIA roles must be in the correct scope
- ✓ Elements with ARIA roles must use a valid, non-abstract ARIA role
- ✓ An element's ID must be unique in the DOM
- ✓ The web page should have the content's human language indicated in the markup
- ✓ Images should have an alt attribute
- ✓ role=main should only appear on significant elements
- ✓ Meaningful images should not be used in element backgrounds
- ✓ The web page should have a title that describes topic or purpose
- ✓ Elements with ARIA roles must have all required attributes for that role

- * Controls and media elements should have labels

```
#crayon-55873aeb8add4749458148 > .crayon-plain-wrap > .crayon-plain.print-no  
#crayon-55873aeb8ade1849624384 > .crayon-plain-wrap > .crayon-plain.print-no
```

- * These elements are focusable but either invisible or obscured by another element

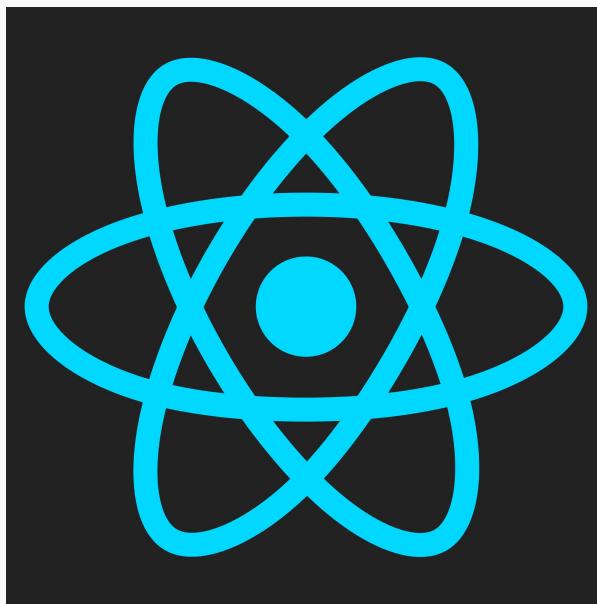
```
#site-navigation > .screen-reader-text.skip-link > A  
#crayon-55873aeb8add4749458148 > .crayon-plain-wrap > .crayon-plain.print-no  
#crayon-55873aeb8ade1849624384 > .crayon-plain-wrap > .crayon-plain.print-no  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(2)
```

- * The purpose of each link should be clear from the link text

```
#masthead > .col-md-10.col-md-offset-1 > .site-title > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(2)  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(3)  
#page > .no-padding.col-md-10.col-md-offset-1.wrapper > .col-md-4.secondary > .social > A:nth-of-type(4)
```

- * Text elements should have a reasonable contrast ratio

JavaScript Frameworks



ng**function**

angular.bind
angular.bootstrap
angular.copy
angular.element
angular.equals
angular.extend
angular.forEach
angular.fromJson
angular.identity
angular.injector
angular.isArray
angular.isDate
angular.isDefined
angular.isElement
angularisFunction
angular.isNumber
angularisObject
angular.isString
angular.isUndefined
angular.lowercase
angular.merge
angular.module
angular.noop
angular.reloadWithDebugInfo
angular.toJson
~~angular.unescape~~

ngAria

[Improve this Doc](#)

The `ngAria` module provides support for common [ARIA](#) attributes that convey state or semantic information about the application for users of assistive technologies, such as screen readers.

Usage

For ngAria to do its magic, simply include the module `ngAria` as a dependency. The following directives are supported: `ngModel`, `ngDisabled`, `ngShow`, `ngHide`, `ngClick`, `ngDblClick`, and `ngMessages`.

Below is a more detailed breakdown of the attributes handled by ngAria:

Directive	Supported Attributes
<code>ngDisabled</code>	<code>aria-disabled</code>
<code>ngShow</code>	<code>aria-hidden</code>
<code>ngHide</code>	<code>aria-hidden</code>
<code>ngDblclick</code>	<code>tabindex</code>
<code>ngMessages</code>	<code>aria-live</code>
<code>ngModel</code>	<code>aria-checked</code> , <code>aria-valuemin</code> , <code>aria-valuemax</code> , <code>aria-valuenow</code> , <code>aria-invalid</code> , <code>aria-required</code> , <code>input roles</code>



reactjs / react-a11y

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Identifies accessibility issues in your React.js elements

[113 commits](#)[5 branches](#)[22 releases](#)[10 contributors](#)Branch: [master](#) ▾[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download](#) ▾ **wyattdanger** release v0.3.3

Latest commit 64fe62c on Apr 15

	lib	Resolve issue 102 by testing both component and its instance (#103)	3 months ago
	scripts	add `npm run release`	a year ago
	.gitignore	Mark all failing tags with an ID and include it in the message	a year ago
	.jshintrc	first	2 years ago
	.npmignore	first	2 years ago

WAI and **WCAG**

Web Accessibility Initiative

Web Content Accessibility Guidelines

WAI

Web Accessibility Initiative

publishes

WCAG

Web Content Accessibility Guidelines

3 Things You Can Do Right Now

1. Audit your site
2. Check your color scheme
3. Join the community!



Let's audit some sites!