DIY Accessibility Testing & Auditing

DrupalCampNJ 2020
Hi, there!

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Outline

1. Level setting ourselves
2. Building your toolset
3. Defining the scope
4. Using automated tools
5. Keyboard and manually testing your site
6. Determining next steps
“Disability is not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives.”

- World Health Organization
1. Level setting ourselves

Before we begin, let’s cover some ground rules to set our expectations.
Prerequisites and reminders

1. Very familiar with HTML and CSS basics.
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2. Very familiar with your site’s architecture and functionality.
1. Level setting ourselves

Prerequisites and reminders

1. Very familiar with HTML and CSS basics.
2. Very familiar with your site’s architecture and functionality.
3. Automated tools pick up < 40% errors.\(^1\) You must manually test.
Prerequisites and reminders

1. Very familiar with HTML and CSS basics.
2. Very familiar with your site’s architecture and functionality.
3. Automated tools pick up > 40% errors.¹ You must manually test.
4. Compliance does not equal a truly accessible site.
Prerequisites and reminders

1. Very familiar with HTML and CSS basics.
2. Very familiar with your site’s architecture and functionality.
3. Automated tools pick up > 40% errors.¹ You must manually test.
4. Compliance does not equal a truly accessible site.
5. This is not a guide for a full or comprehensive accessibility audit.
1. Level setting ourselves

Why now?

1. Are you redesigning your site?
Why now?

1. Are you redesigning your site?

2. Are you doing considerable development work?
1. Level setting ourselves

Why now?

1. Are you redesigning your site?
2. Are you doing considerable development work?
3. Are you being sued? Are you afraid of being sued?
1. Are you redesigning your site?
2. Are you doing considerable development work?
3. Are you being sued? Are you afraid of being sued?
4. Are you just trying to make your website better?
1. Level setting ourselves

What’s your bandwidth?

1. Do you have the in-house capacity to confidently identify errors?
What’s your bandwidth?

1. Do you have the in-house capacity to confidently identify errors?
2. Do you have the in-house capacity to confidently fix errors?
1. Level setting ourselves

**What’s your bandwidth?**

1. Do you have the in-house capacity to confidently identify errors?
2. Do you have the in-house capacity to confidently fix errors?

If you answer no to either of these questions…

**Contact a vendor.**
How do you create an a11y process?

1. Standardize your interpretation, goals, and tools.
How do you create an a11y process?

1. Standardize your interpretation, goals, and tools.
   a. Are we working toward a minimum, optimized, or idealized solution?
How do you create an a11y process?

1. **Standardize your interpretation, goals, and tools.**
   a. Are we working toward a minimum, optimized, or idealized solution?
   b. Are we using the same tools?
How do you create an a11y process?

1. Standardize your interpretation, goals, and tools
   a. Are we working toward a minimum, optimized, or idealized solution?
   b. Are we using the same tools?

1. Identify your Achilles’ heel.
How do you create an a11y process?

1. Standardize your interpretation, goals, and tools
   a. Are we working toward a minimum, optimized, or idealized solution?
   b. Are we using the same tools?

1. Identify your Achilles’ heel.

2. Share knowledge (and responsibility).
2. Building your toolset

Automated tools pick up different errors.\(^2\)
Standardizing your toolset is a must.
Automated tools

Siteimprove browser extension
Headings are not nested properly

2.4.10 Section Headings

The headings on the page must be hierarchically organized.

Think of headings as sign posts providing users context.

Screen readers often use a shortcut allowing users to view a list of all headings found on the page. The screen reader uses the heading code (H1-H6 and WAI-ARIA headings and their 'aria-level') to create this list. Some users also tab through the headings of a page.

Heading codes used in the proper order will give an accurate 'picture' of what is on the web page.

Headings must not skip levels.

There must be at least one top level heading (H1 or WAI-ARIA role="heading" with an 'aria-level'="1") present on the page and sub headings for this must be H2 or WAI-ARIA role="heading" aria-level="2" and so on.

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Instances on this page

- Siteimprove transforms the way you... 
- Know Everything
- Small & Medium Businesses
- Open DevTools to view code snippet
- Create an account now and be on...
2. Building your toolset

Automated tools

- Siteimprove browser extension
- Microsoft Accessibility Insights
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 comunes 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?

There are at least 18 accessibility issues on this page. To see a list of all known issues, click here. To see a more accessible version of this same page, click here. For a cheat sheet of accessibility issues, click here.

-72.9°
2. Building your toolset

Automated tools

- Siteimprove browser extension
- Microsoft Accessibility Insights
- WAVE browser extension
1. Building your toolset

Other tools

Web browser
Other tools

Web browser

Keyboard
1. Building your toolset

Other tools

- Web browser
- Keyboard
- Spreadsheet
3. Defining the scope

Document what you are and are not evaluating.
What pages should you test?

Homepage
Contact page(s)
Top-visited pages
Out of a million homepages...

98%

had detectable WCAG 2 failures.³
Users with disabilities would expect to encounter detectable errors on 1 in every 13 elements with which they engage.
3. Defining the scope

What pages should you test?

The best representation of each **type of page**

Example: landing page, blog post, search results page
What pages should you test?

The best representation of each **type of process**

Example: multi-step form, checkout, registration form, status messaging
3. Defining the scope

What else should you include?

- A list of the areas you’re NOT testing
- A list of all the tools you used to test
A quick word on compliance:

1. Only achieved if the full Web page is in compliance.
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2. All web pages in the process must conform.
A quick word on compliance:

1. Only achieved if the full Web page is in compliance.
2. All web pages in the process must conform.
3. All information, content, and functionality must be provided in a way that is supported by assistive technology.
3. Defining the scope

A quick word on compliance:

1. Only achieved if the full Web page is in compliance.
2. All web pages in the process must conform.
3. All information, content, and functionality must be provided in a way that is supported by assistive technology.
4. Non-conforming parts can’t block the user’s ability to access the rest of the page.
4. Using automated tools

Find the most common accessibility errors.
4. Using automated tools

Setting up

Spreadsheet

Automated tools
Accessibility Checker

Choose conformance level
- A conformance 19
- AA conformance 22
- AAA conformance 28

What does conformance level mean?

Choose severity
- Error 15
- Warning 6
- Review 7

What does severity mean?

Choose responsibility
- Editor 11
- Webmaster 6
- Developer 11

What does responsibility mean?
2019 featured more grants and scholarships

We realize attending DrupalCon is a dream for many, which is why we offered opportunities for individuals to attend DrupalCon. We extend a hearty congratulations to the 2019 scholarship recipients.

MEET THE RECIPIENTS

News & Updates

Reflections from DrupalCon Seattle's Grant & Scholarship Recipients

What an event this last DrupalCon was! Thanks to all who joined us in April for DrupalCon Seattle 2019.
DrupalcCon
SEATTLE, WA, USA
APRIL 23-26, 2019
Accessibility Insights for Web

Watch 3-minute video introduction

Launch pad

FastPass
Run two tests to find the most common accessibility issues in less than 5 minutes.

Assessment
Walk through a guided process for assessing accessibility compliance.

Ad hoc tools
Get quick access to visualizations that help you identify accessibility issues.

Version 2.9.1 | Powered by axe-core 3.2.2
Automated checks

Automated checks can detect some common accessibility problems such as missing or invalid properties. But most accessibility problems can only be discovered through manual testing. The best way to evaluate web accessibility compliance is to complete an assessment.

Show failures On ➞ Export result

25 failures were detected. When the Automated Checks toggle is on, failure instances selected in this page are highlighted in the target page.

- color-contrast: Elements must have sufficient color contrast (18) WCAG 1.4.3
- html-has-lang: <html> element must have a lang attribute (1) WCAG 3.1.1
- label: Form elements must have labels (2) WCAG 1.3.1, WCAG 3.3.2
- link-name: Links must have discernible text (4) WCAG 2.4.4, WCAG 4.1.2

Failure details

Select a single failure instance from a group in the table above to see more details here.
Automated checks results

Summary

- 25 Failed
- 20 Passed
- 23 Not applicable

Scan details

- https://events.drupal.org/seattle2019
- 2019-09-09 5:52 PM UTC

Failed instances (25)

- color-contrast: Ensures the contrast between foreground and background colors meets WCAG 2 AA contrast ratio thresholds
  
  Resources for this rule
  
  More information about color-contrast
  
  WCAG 1.4.3

  Path: .date

  Snippet: <div class="date">October 28 - 31, 2019</div>

  How to fix: Fix the following:
  
  - Element has insufficient color contrast of 4.48 (foreground color: #e22b4a, background color: #ffffff, font size: 1.3pt, font weight: normal). Expected contrast ratio of 4.5:1

- html-has-lang: Ensures every HTML document has a lang attribute

- label: Ensures every form element has a label

- link-name: Ensures links have discernible text

Passed checks (20)

Not applicable checks (23)
5. Keyboard and manually testing your site

Evaluate your site’s functionality.
5. Keyboard and manually testing your site

Keyboard testing basics

**TAB**
Go forward

**TAB** + **SHIFT**
Go backward

**ENTER** OR
**SPACE**
Activate

Move around
What are we checking for?

1. **Visible focus**
   When we navigate to an interactive component, it is visually apparent.
What are we checking for?

1. Visible focus
   When we navigate to an interactive component, it is visually apparent.

2. Keyboard navigation
   We can navigate to all interactive components.
What are we checking for?

1. **Visible focus**
   When we navigate to an interactive component, it is visually apparent.

2. **Keyboard navigation**
   We can navigate **to** all interactive components.

3. **No keyboard traps**
   We can navigate **away** from all interactive components.
5. Keyboard and manually testing your site

What are we checking for?

4. **On focus**
   
   Navigating to a component does not cause a change of context, like opening a new browser window.
What are we checking for?

4. **On focus**
   Navigating to a component does not cause a change of context, like opening a new browser window.

5. **On input**
   Changing a component’s settings does not cause a change of context, like submitting a form when the user leaves the last input field on the form.
5. **Keyboard and manually testing your site**

What are we checking for?

4. **On focus**
   Navigating to a component does not cause a change of context, like opening a new browser window.

5. **On input**
   Changing a component’s settings does not cause a change of context, like submitting a form when the user leaves the last input field on the form.

6. **No keystroke timing**
   No components require specific keystroke timing, like an app only loading if we hold down a key for 5 seconds.
### Keyboard

#### Getting Started

#### Requirements

<table>
<thead>
<tr>
<th></th>
<th><strong>Keyboard navigation.</strong> Users must be able to navigate to all interactive interface components using a keyboard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>No keyboard traps.</strong> Users must be able to navigate away from all components using a keyboard.</td>
</tr>
<tr>
<td>3</td>
<td><strong>On focus.</strong> Navigating to a component must not trigger any unexpected change of context.</td>
</tr>
<tr>
<td>4</td>
<td><strong>On input.</strong> Changing a component's settings must not trigger any unexpected change of context.</td>
</tr>
<tr>
<td>5</td>
<td><strong>No keystroke timing.</strong> Components must not require specific timings for individual keystrokes.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Character key shortcuts.</strong> Users must be able to turn off or remap character key shortcuts.</td>
</tr>
</tbody>
</table>

#### Keyboard navigation

##### Visual helper

- **Off**

##### How to test

The visual helper for this requirement records elements in the target page that receive the input focus.

1. Use the keyboard to navigate through all the interactive interface components in the target page.
   - Use **Tab** and **Shift+Tab** to navigate between widgets both forwards and backwards.
   - Use the arrow keys to navigate between the focusable elements within a composite widget.
2. If a "keyboard trap" prevents the focus from leaving a widget:
   - Use your mouse to move the focus to the next widget.
   - Resume testing.
3. If you encounter any trigger component that reveals hidden content:
   - Activate the trigger.
   - Navigate through the revealed content.
   - Close the revealed content.
   - Resume navigating the page.
4. Verify that you can navigate to all interactive components using the keyboard.
5. Record your results:
   - If you find any failures, select **Fail**, then add them as failure instances.
   - Otherwise, select **Pass**.

- **Pass**
- **Fail**
Healthcare
This Summit aims to help connect you with Drupal users in the industry - be it pharma, scientific, or medical, to learn from each other about best practices, new trends, and generate ideas.

LEARN MORE

Libraries
This Summit is a one-day event for anyone using Drupal at a library who is looking to connect with other library users through presentations, peer networking, and collaborative round table discussions.

LEARN MORE

Nonprofit
The Nonprofit Summit aims to help connect you with other nonprofit Drupal users, to learn from each other about best practices, new trends, and generate ideas in a day that includes collaborative peer discussion and networking.

LEARN MORE
6. Determining next steps

What now?
Prioritizing defects in-house

1. Basic tasks
   Example: creating an account, logging in, buying a product
Prioritizing defects in-house

1. **Basic tasks**
   Example: creating an account, logging in, buying a product

2. **Navigation issues**
   Example: skipped heading levels, no skip links, focus order
6. Determining next steps

Prioritizing defects in-house

1. **Basic tasks**
   Example: creating an account, logging in, buying a product

2. **Navigation issues**
   Example: skipped heading levels, no skip links, focus order

3. **Form submissions**
   Example: contact form, feedback form, surveys, donation form
CAN'T GET A11Y COMPLAINTS
IF YOUR CONTACT FORM IS INACCESSIBLE
6. Determining next steps

Prioritizing defects in-house

4. Pages with legal implications
   Example: privacy policy, nutritional information, GDRP pages
6. Determining next steps

Prioritizing defects in-house

4. Pages with legal implications
   Example: privacy policy, nutritional information, GDRP pages

5. High traffic pages
   Example: homepage, landing pages, campaign pages
Prioritizing defects in-house

4. **Pages with legal implications**
   Example: privacy policy, nutritional information, GDRP pages

5. **High traffic pages**
   Example: homepage, landing pages, campaign pages

6. **Issues picked up by free crawlers**
   Example: the issues found by using automated tools
Creating an accessibility statement

1. Measures your organization takes to support accessibility
Creating an accessibility statement

ACME Inc. takes the following measures to ensure accessibility of the ACME Inc. website:

- Include accessibility as part of our mission statement.
- Integrate accessibility into our procurement practices.
- Appoint an accessibility officer and/or ombudsperson.
- Provide continual accessibility training for our staff.
- Include people with disabilities in our design personas.
Creating an accessibility statement

1. Measures your organization takes to support accessibility

2. Which accessibility standard your site follows
Creating an accessibility statement

To help make the ACME Inc. website a positive experience for everyone, we have been using the Web Content Accessibility Guidelines (WCAG) 2.1, which explain how to make web content more accessible for people with disabilities and user-friendly for everyone.

The guidelines have three levels of accessibility (A, AA and AAA). We’ve chosen Level AA as the target for the ACME Inc. website.
Creating an accessibility statement

1. Measures your organization takes to support accessibility
2. Which accessibility standard your site follows
3. Contact information for issues or feedback
Creating an accessibility statement

If you enjoyed using the ACME Inc. website, or if you had trouble with any part of it, please get in touch. We'd love to hear from you in any of the following ways:

E-mail: AnActualPerson@example.com
Phone: (555) 867-5309

We aim to respond to feedback within 1-3 business days.
Creating an accessibility statement

1. Measures your organization takes to support accessibility
2. Which accessibility standard your site follows
3. Contact information for issues or feedback
4. Accessibility features your site has
Creating an accessibility statement

Accessibility features on the ACME Inc. website:

- Invisible skip links that lead screen reader users directly to the main content on a page
- Headers that help define page organization
- Videos that are captioned and include transcripts
- Color contrast that assists reading for people who are color blind or have vision impairments
6. Determining next steps

Creating an accessibility statement

1. Measure your organization takes to support accessibility
2. Which accessibility standard your site follows
3. Contact information for issues or feedback
4. Accessibility features your site has
5. Known areas that have limitation or are non-compliant
Creating an accessibility statement

1.1.1: Non-text Content
As we continue to move our old content over to our new site, we will be reviewing all non-text content on a case-by-case basis to ensure that items have the proper text alternative.

1.2.3: Audio Description or Media Alternative (Prerecorded)
We are reviewing our video content and will be making captioning and transcripts available as they are completed. Should you need an audio description or media alternative before it is available, please reach out to us at AnActualPerson@example.com and we will work to get it to you as soon as possible.
6. Determining next steps

Creating an accessibility statement

1. Measure your organization takes to support accessibility
2. Which accessibility standard your site follows
3. Contact information for issues or feedback
4. Accessibility features your site has
5. Known areas that have limitation or are non-compliant
6. Time frame of when you expect to reach accessibility milestones
Creating an accessibility statement

April 2020
We plan to have rectified all keyboard navigation errors by this time.

December 2020
While new video content posted on this site have both transcripts and captions, videos posted to this site prior to 2014 might lack them. By this time, all video content on our site will have transcripts and captions.
Creating an accessibility statement

1. Minimal example:
   https://www.w3.org/WAI/planning/statements/minimal-example/

2. Complete example:
   https://www.w3.org/WAI/planning/statements/complete-example/

3. Accessibility statement generator:
   https://www.accessibilitystatementgenerator.com/
Resources

2. https://accessibilityinsights.io/
3. https://wave.webaim.org/extension/
5. **Code Academy:** Learn HTML and Learn CSS
6. **HTML Dog:** HTML Beginner Tutorial and CSS Beginner Tutorial
Sources

1. https://alphagov.github.io/accessibility-tool-audit/