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Practical Accessibility Testing Tools for Everyone

Lewis Phillips, CPACC
AT&T Accessibility Solutions Engineer

Crystal Baker, PMP, CPACC
AT&T Accessibility Solutions Engineer

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Good afternoon, My name is Lewis Phillips, this is my colleague Crystal Baker. We both work for AT&T in their Corporate Accessibility Technology Office. Together we have a combined 28 years of accessibility experience both in the public and private sectors.



Yet Another Testing Class...

This is a review of a few tools and techniques for testing with brief demonstrations.

These are just *some* tools, not every tool out there. They work for us or they're part of what we are approved for use at AT&T.

If these tools don't work for you, there will be similar tools that give you the same results.



Top Web Accessibility Errors

1. Insufficient color contrast
2. Improper use of header tags
3. Language attributes
4. Non-descriptive hyperlink text
5. Improper form labels
6. Missing alt text
7. Missing focus indicator & other keyboard errors
8. Improper table markup



Manual vs. Automated Accessibility Testing



Manual and Automated Testing

Manual

- By hand
- Can use tools as an aid, but requires an evaluation of the results
- Example – Colour Contrast Analyser

Automated

- Software based
- Limited types of tests that do not need manual confirmation
- Example - aXe

The Glass

To an optimist, the glass is half full.

To a pessimist, the glass is half empty.

To a good tester, the glass is twice as big as it needs to be.

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How Do I Test?





Where to begin

1. Discover your current status
2. Make Corrections and Refine Training
3. Consider Regular Use of an Automated Solution
4. Consider Outsourcing

Here are 4 steps to get you started in the right direction. You don't want to just dive into testing with a game plan. I have found that managers and directors may not be able to quickly grasp accessibility but numbers they get, numbers and statistics they understand. So start with determining your current status.

1. Discover your current status.

Use manual tools and automated tools if they are available to you. You will always need manual testing. Use your resources to determine your current accessibility status, how bad is it? find your errors, then begin to sort those errors so you can find the low hanging fruit and know where to focus your efforts first.

- When you are using manual testing tools, make sure you know what you are doing, make sure you know how to use the tool. Manual testing is time consuming, so it is feasible to test a small number of Web pages in each domain or major area of your website(s) to get you and idea of what's going on. If there is any user interaction such as registering for courses, applying for a job, make sure a sample of that is in your testing. Once you have those sample results, you can then create an informed game plan for testing everything.
- If you have an automated testing tool at your disposal, use it to test all of your domains. A good automated solution can also identify PDFs and other non-HTML content that may need special manual review. You will always need manual testing in some form or another.

2. Make Corrections and Refine Training. In discovering your current status, you will understand what types of Web accessibility problems occur on your site(s), how often and where. This information informs your organization of exactly what to fix—**which leads to discover what areas require improved training.**

3. Consider Regular Use of an Automated Solution. Regular reviews using an automated solution together with occasional and limited manual reviews will give you clear metrics of your success. It will also help to immediately identify issues as they arise, preventing major problems.

4. Consider Outsourcing. If you just do not have the staff resources to address accessibility, consider having a third party help you get started. There are companies that specialize in this work, a few of them here today at AccessU. They can help you avoid a long, steep, and expensive learning curve.



Tools for Testing



CLASS ENGAGEMENT:
LEWIS ASK FOR TOOLS THAT EVERYONE KNOWS
CRYSTAL WRITES ON BOARD.

From our brains:

Color Contrast Analyzer (Paciello)

Color Contrast Checker (WebAIM)

JAWS (Freedom Scientific)

NVDA

FireEyes (Deque)

Axe (Deque)

Amaze (Deque)

FireBug

WAVE (WebAIM)

WAT (for IE)

PEAT (Univ. of Wisconsin-Madison)

Flesch-Kincaid

AMP (SSB BART)

WorldSpace (Deque)

Where to find some of the tools



- WAT <https://www.paciellogroup.com/resources/wat/>
 - Internet Explorer
 - Colour Contrast Analyser
 - Language attributes
 - Document structure
- aXe <https://www.deque.com/products/axe/>
 - Browser add-on
 - Automated testing per page
- Developer Toolbars
 - Firefox <https://addons.mozilla.org/en-US/firefox/addon/web-developer/>
 - Chrome <https://chrome.google.com/webstore/category/extensions?hl=en-US>
- Colour Contrast Analyser
<https://www.paciellogroup.com/resources/contrastanalyser/>
- WAVE (<https://wave.webaim.org/extension/>)
 - Firefox
 - Chrome

Testing Definition

To tell somebody that he is wrong is called criticism. To do so officially is called testing.



Demonstrations

- ✓ Color Contrast
- ✓ WAT Toolbar (Internet Explorer)
- ✓ aXe (Chrome)
- ✓ WAVE (Firefox)
- ✓ Keyboard Navigation

Color Contrast - colour contrast analyser, aXe -
any browser - pick an issue

WAT Toolbar - items to highlight:

Home - structure > headings

images > show images

Tickets - tables > data tables

Doc Info. > show lang attribute

Show Accessible Tickets

aXe - multiple issues, how to move between, how to view code

aXe + Chrome on Home page

select Highlight

color

shows font and background color, font size, and ratio

language

WAVE

WAVE + FF

alt text

language

form elements

table elements

Keyboard - focus indication, where is focus,

Words

Developer: There is no I in TEAM

Tester: We cannot spell BUGS with out U

Color Contrast

WCAG 1.4.3 Contrast (Minimum) (AA)

- Ensure everything has been done correctly
- WAT toolbar includes the colour contrast analyser
- aXe



Document Structure (Headings)

WCAG 1.3.1 Info and Relationships (A)

WCAG 2.4.6 Headings and Labels (AA)

- WAT Toolbar – Structure

Document Framework (Language Declaration)

WCAG 3.1.1 Language of Page (A)

- WAT toolbar – Document Information
- Axe for document declaration – error when missing
- Developer toolbars to see code



Content (Static) (link text)

WCAG 2.4.4 Link Purpose (In Context)
(A)

WCAG 2.4.9 Link Purpose (Link Only)
(AAA)

Manual Inspection

Form (labels)

WCAG 3.3.2 Labels or Instructions (A)

- aXe

WCAG 4.1.2 Name, Role, Value (A)

Images

WCAG 1.1.1 Non-text Content (A)

WCAG 1.4.5 Images of Text (AA)

WCAG 1.4.9 Images of Text (No Exception) (AAA)

WCAG 4.1.2 Name, Role, Value (A)

- WAT Toolbar – Images
- aXe



Keyboard Navigation and Visible Focus

WCAG 2.1.1 Keyboard (A)

WCAG 2.1.2 No Keyboard Trap (A)

WCAG 2.4.7 Focus Visible (AA)

- Manual
- Unplug the mouse
- Keys to use
 - Tab
 - Shift + Tab
 - Arrow keys
 - Enter
 - Space

Tables

WCAG 1.3.1 Info and Relationships (A)

- WAT
Toolbar –
Tables
- aXe

A Tester's Courage

The Director of a software company proudly announced that a flight software developed by the company was installed in an airplane and the airlines were offering free first flights to the members of the company. “Who is interested?” the Director asked. Nobody came forward. Finally, one person volunteered. The brave Software Tester stated, “I will do it. I know that the airplane will not be able to take off.”



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