

# **HOW-TO TEST YOUR WEBSITE AND APPLICATIONS**

## **EASY WAYS TO SPOT ACCESSIBILITY PROBLEMS**

Tim Offenstein – Sept. 30, 2025





# GREETINGS!

- Retired in October 2020 but couldn't give it up!
- ***Past:*** Lead Information Design Specialist, founder of IT Accessibility Liaisons, co-author of the Campus Accessibility Policy, UIUC Webmaster Godfather.
- ***Present:*** Extra Help! Doing accessibility review of UIUC campus websites and applications, like the Library's suite of applications.
- Thanks to Nicole Swanson for the invitation.





## AM I ACCESSIBLE?

- Are there problems with my web site?
- What are some ways I can find out quick?
- What are some good tools that will help?
- Can I trust what the tool says?





# MANUAL & AUTOMATED

- Both are important
- Automated catches about 40 to 60% of the issues
- Manual catches human interaction errors
- Logic errors – does this make sense?
- User interface – is this easy or hard to use?





## STEP 1

### WHAT DO YOU SEE?

- Are things organized for good eye flow?
- Links - Read More..., Click here, URL links
- Consistent navigation
- Strong contrasting colors
- Readable type







## STEP 2

# USE YOUR INDEX FINGER!

Start with the Keyboard and the TAB key

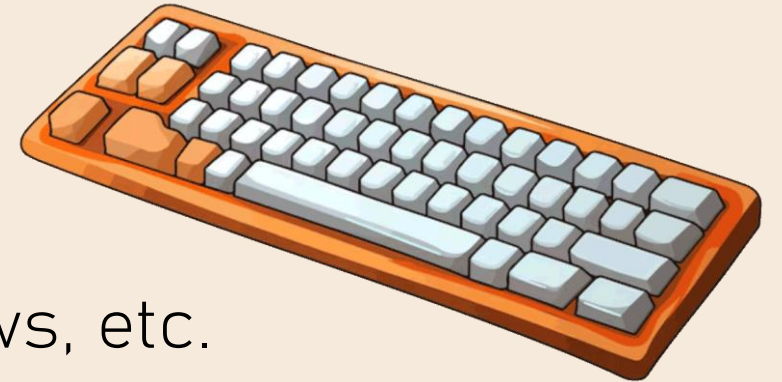
- TAB to go forward
- Shift+TAB to go back
- Return/Enter key to activate
- Space Bar to select
- Arrow keys to move within a popup window
- ESC key to exit a window





# WHAT DOES THIS TELL US?

- Visual focus – can you see where you're at on the page?
- Focus order – is it logical?
- Interaction – can you work with the web page? Open/close windows, etc.
- Form controls – can you fill out a form, activate the buttons, select checkboxes?
- Videos – can you start, pause, control the video?







## DRAWBACKS

- Tab key only shows you things like links (focusable)
- Difficult to do if Visual Focus is weak or missing (depends on Browser)
- Does not create the same interaction as users with assistive technology
- Majority of screen reader users rely on HEADERS and LANDMARKS to navigate the page





TAKE A LOOK

**I** ILLINOIS

**NAGW**

NATIONAL ASSOCIATION OF GOVERNMENT WEB PROFESSIONALS

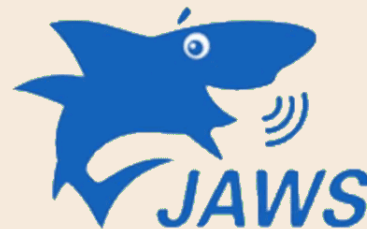


## STEP 3

# A WORD ABOUT SCREEN READING SOFTWARE (1 OF 3)

JAWS, NVDA, VoiceOver

- JAWS (Job Access With Speech) – 55% market share, Windows only, free 40-minute trial
- NVDA (NonVisual Digital Access) – 30% market share, Windows only, free
- VoiceOver – Mac product, integrated into OS/iOS







# A WORD ABOUT SCREEN READING SOFTWARE (2 OF 3)

- Learning curve on any screen reader is not trivial
- Screen Readers provide a lot of helpful navigation tools/lists
- Different then page readers
- JAWS has several hundred keyboard commands
- NVDA – open source, easiest to use
- VoiceOver – lots of helps, reasonably easy to use.





# A WORD ABOUT SCREEN READING SOFTWARE (3 OF 3)

## Mobile Screen Readers

- VoiceOver for iOS
  - Easy access through settings – Triple click
- TalkBack for Android
  - Hold Volume key for 3 seconds
- Quickly shows whether or not your site is accessible





## STEP 4

# AUTOMATED TOOLS

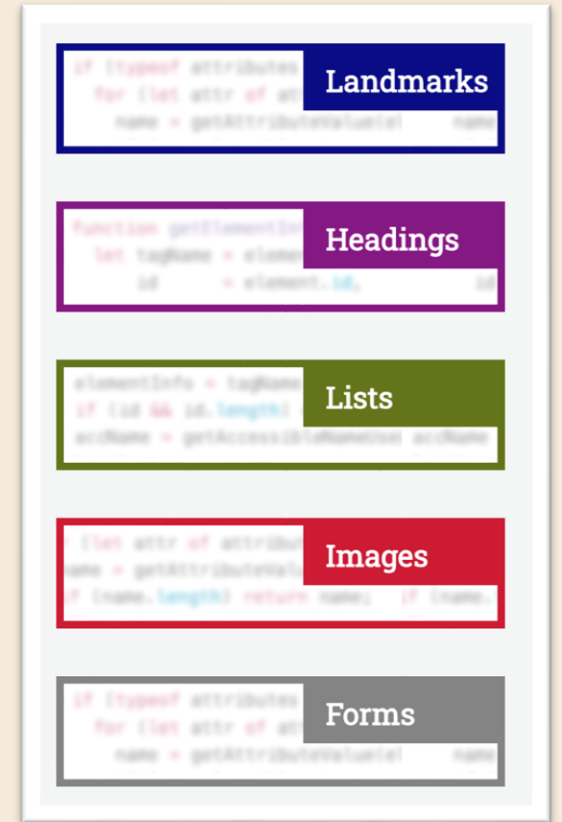
- Authored by humans
- Subject to interpretation of WCAG
- Can miss major errors
- These are just the FREE tools
- This review is NOT exhaustive
- Many are hooks to get you to sign up for their service





# BOOKMARKLETS

- Available Bookmarklets
- Easy to install, just click and drag to your Bookmarks bar
- Doesn't work on sites behind a firewall
- [accessibility-bookmarklets.org/](https://accessibility-bookmarklets.org/)



**Study: Civil organizing persisted during Syrian civil war** h1

JANUARY 22, 2025 8:00 AM

BY [PHIL CICIORA](#)

BUSINESS AND LAW EDITOR

Humanities

Research news

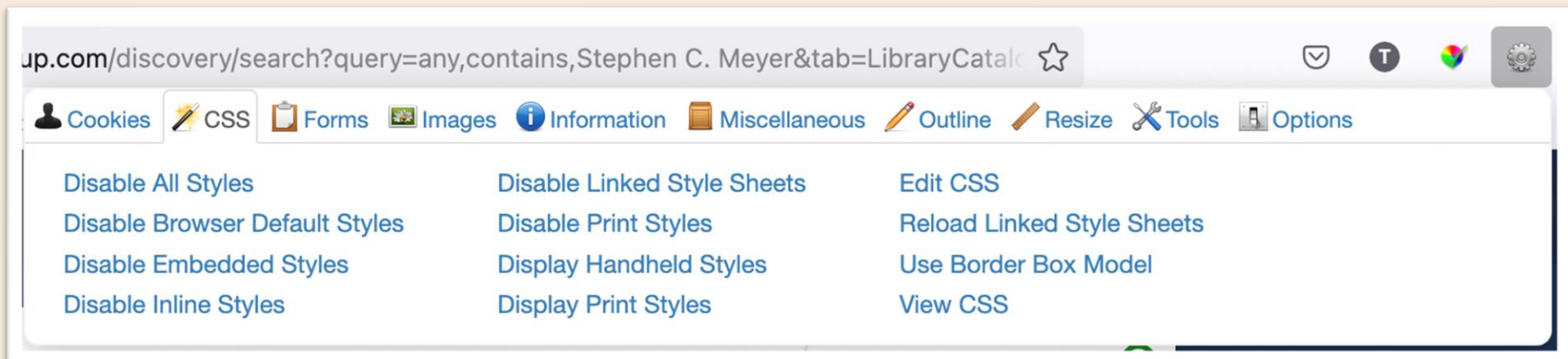




# Web Developer

Adds a toolbar button with various web developer tools.

- Excellent tool for displaying what's behind the scenes
- Availability varies per browser
- [chrispederick.com/work/web-developer/](http://chrispederick.com/work/web-developer/)





# COLOUR CONTRAST ANALYSER

- Stand alone application
- Shows the precise contrast ratios
- Shows type-size violations
- References specific WCAG 2.1 AA and AAA Success Criteria
- [www.tpgi.com/color-contrast-checker/](http://www.tpgi.com/color-contrast-checker/)







- One of the original accessibility tools
- Overlays page with lots of icons
- Flags everything, whether it's a violation or not
- Lots of False-Positives
- Not recommended
- [wave.webaim.org/](http://wave.webaim.org/)



# ANDI

Tutorial Modules Alerts FAQ Developer Tips Install

- Developed by Social Security Administration to encourage compliance with Sect. 508.
- Interface overlays the page
- [www.ssa.gov/accessibility/andi/help/install.html](http://www.ssa.gov/accessibility/andi/help/install.html)





# ANDI

[Tutorial](#) [Modules](#) [Alerts](#) [FAQ](#) [Developer Tips](#) [Install](#)

- Does a nice job highlighting focusable elements
- Modules has a TABLE highlighter which is handy
- Developer Tips has a lot of good information.

Search for event...

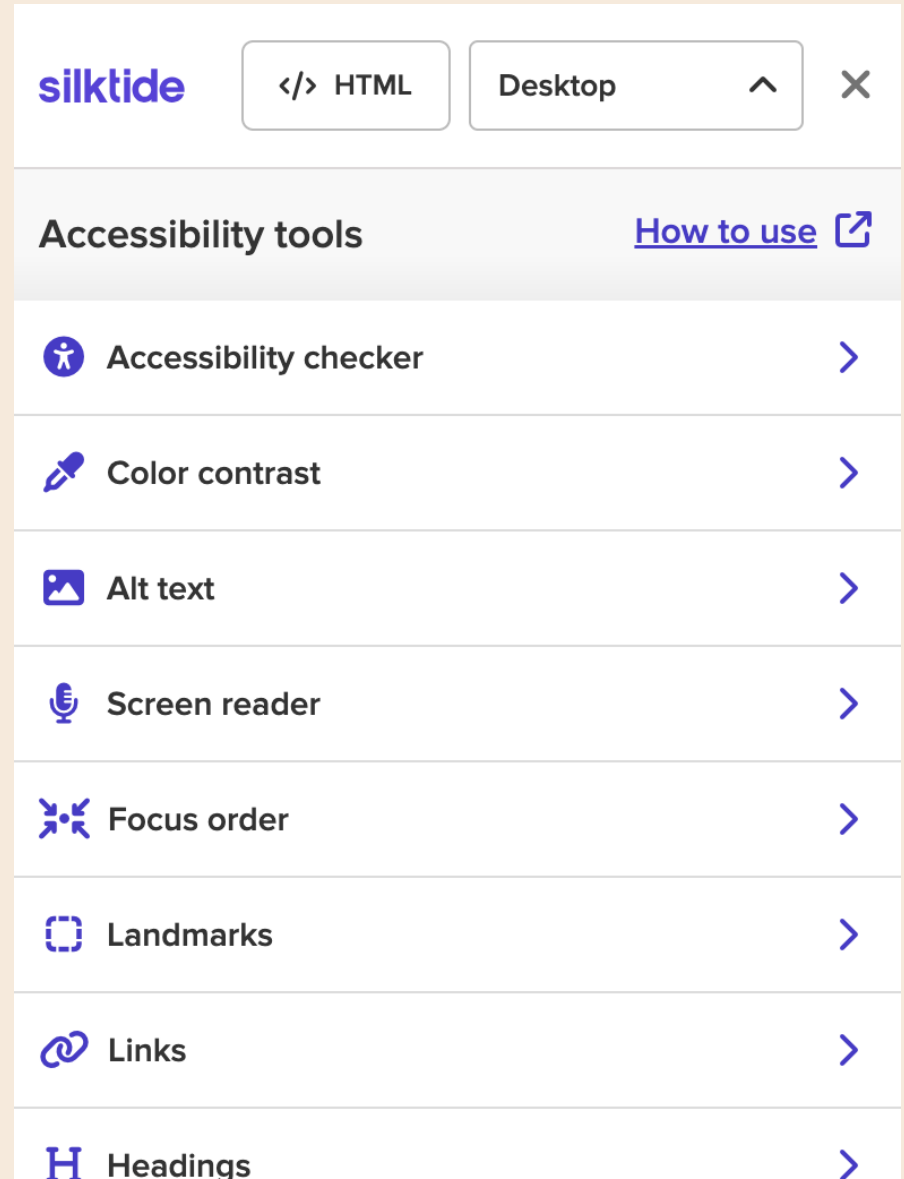
Search





# SILKTIDE

- Add as an extension
- Provides a wide array of tools
- Highlights issues and gives good explanations
- <https://silktide.com/>





# ARC Toolkit

Version: 5.7.6

- Effective display and description of the issues
- Highlights where the issues are found
- [chromewebstore.google.com/search/ARC%20Toolkit](https://chromewebstore.google.com/search/ARC%20Toolkit)

Search anything



MD-SELECT ERR

that contain

MD-SELECT ERR

anywhere

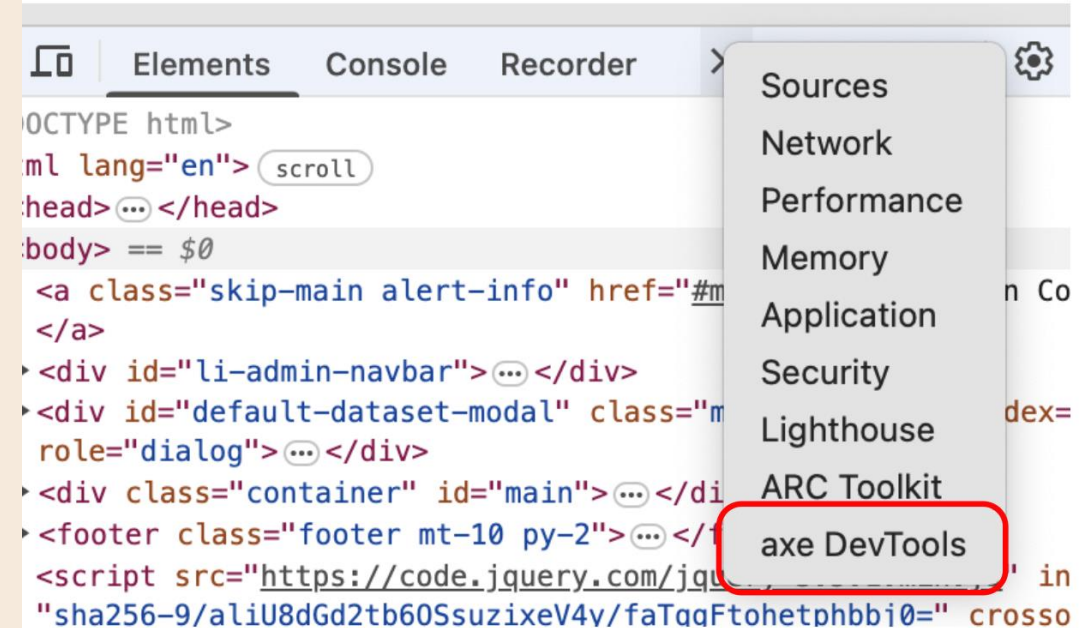
MD-SELECT ERR





**axe DevTools v4.101.0**

- U of I has a license to this tool
- Load as an extension
- Cumbersome to get to







**axe DevTools v4.101.0**

- Intuitive interface
- Robust evaluation
- Good explanations of violations found

The screenshot shows the axe DevTools interface integrated into a web browser's developer tools. At the top, the 'axe DevTools' header displays the version 'axe-core 4.10.0' and a 'start new scan' button. Below this, the 'Test URL' field contains 'https://illinois.libinsight.com/admin/home' with a 'Re-run scan' button. The main section shows a summary of 'TOTAL ISSUES' as '5'. A breakdown of these issues is provided: 'Automatic Issues' (5), 'Critical' (0), 'Serious' (5), 'Moderate' (0), and 'Minor' (0). At the bottom of this section, there are toggle buttons for 'Best Practices: OFF' and 'WCAG 2.1 AA'. The lower part of the interface lists the specific violations found: 'Elements must meet minimum color contrast ratio thresholds' (4 issues) and 'Frames must have an accessible name' (1 issue).

Inspector axe DevTools

DevTools  
axe-core 4.10.0

start new scan

Test URL

Re-run scan

https://illinois.libinsight.com/admin/home

TOTAL ISSUES

Automatic Issues..... 5

Critical..... 0 Serious..... 5

Moderate..... 0 Minor..... 0

Best Practices: OFF WCAG 2.1 AA

Total Issues: 5

Elements must meet minimum color contrast ratio thresholds 4

Frames must have an accessible name 1



# AINSPECTOR (1 OF 3)

- Developed at University of Illinois Urbana-Champaign
- Jon Gunderson & Nick Hoyt
- Works only in Firefox
- Install through Mozilla's Add-ons
- [ainspector.disability.illinois.edu/](https://ainspector.disability.illinois.edu/)

AI Ainspector

Summary: All rules

Back Views

V

W

MC

P

5

1

21

1

i

Rule Categories

WCAG Guidelines

Category	V	W	MC	P
Landmarks	1	0	2	0
Headings	0	1	0	0
Color/Content	0	0	5	1
Images	0	0	0	0
Links	0	0	0	0
Tables/Layout	0	0	3	0
Forms	0	0	0	0
ARIA Widgets	0	0	4	0
Audio/Video	0	0	1	0
Keyboard Support	0	0	4	0
Timing/Live Regions	0	0	1	0
Site Navigation	4	0	1	0
All Rules	5	1	21	1

Details



# AINSPECTOR (2 OF 3)

- Updates automatically
- Good connection to related WCAG Success Criteria
- Gives excellent summation of the issues.

AI Ainspector

Category: Landmarks

Back Views

V

W

MC

P

2

0

2

8

i

Category Results

Rule	Result	SC	Level	Req
All content must be contained in...	V	1.3.1	A	Y
main landmark: at least one	V	2.4.1	A	Y
Landmarks must identify conten...	MC	1.3.1	A	Y
contentinfo landmark: identifi...	MC	2.4.1	A	Y
banner landmark: must be top-l...	P	1.3.1	A	
banner landmark: restrictions	P	1.3.1	A	Y
navigation landmark: restricti...	P	1.3.1	A	Y
search landmark: restrictions	P	1.3.1	A	Y

Selected Rule

Details

Summary

All content must be contained in landmarks

Definition

All rendered content must be placed inside of container elements with appropriate ARIA landmark roles.

Rule Scope

Element

Action

- V: Update the landmark structure of the page by placing the 24 elements not contained in landmarks into one or more container



# AINSTRUCTOR (3 OF 3)

- Highlights where the violation can be found
- Technically oriented
- Strong support of ARIA

**Rule Results**

Element	Result	Pos	Action
h1.accessibl...	V	121	Move <b>h1</b> element into an appropriat...
span.md-he...	V	276	Move <b>span</b> element into an appropri...
p	V	278	Move <b>p</b> element into an appropriate ...
li	V	281	Move <b>li</b> element into an appropriat...
li	V	282	Move <b>li</b> element into an appropriat...
li	V	283	Move <b>li</b> element into an appropriat...
li	V	284	Move <b>li</b> element into an appropriat...
li	V	285	Move <b>li</b> element into an appropriat...

All items ▾ that contain my query words ▾ any

What am I searching?

The Library Catalog is our discovery search tool for

- Books (electronic and print)
- Journals, magazines, and newspapers
- DVDs. CDs. and scores





## WRAP UP

- Automated checkers are fallible
- They have their strengths and weaknesses
- Great way to get a quick overview
- Helps you communicate better with your audiences





COMMENTS/QUESTIONS/FEEDBACK?