Automated Testing Approaches with Real Time Demonstrations

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Live Captions Provided

Two Options:

1. Access StreamText link available in the "Chat" ("Chat" control in Zoom toolbar)

2. Access the "Closed Captions" option ("Closed Captions" control with "CC" above it in Zoom toolbar)

Georgia Tech – CIDI

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- Research (disability-related)
- Accessibility Consulting – ICT and UX
- Braille Services
- Captioning and Described Audio Services
- Professional E-Text Producers
- Certified Assistive Technology Team
    - Tools for Life is celebrating 30 years of service in 2021!

We Are Contributing to an Inclusive World
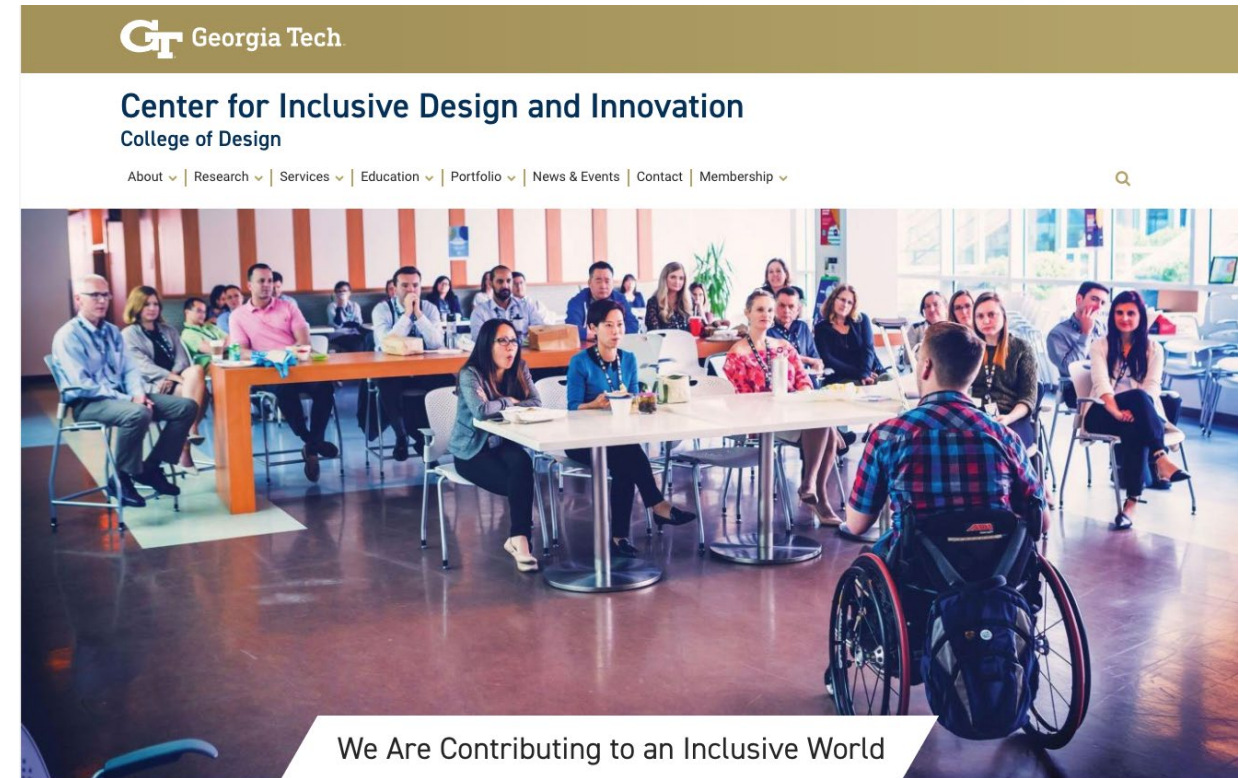
Overview

- CIDI Overview

- Description of Tools

- Tool Comparison

- Testing Methodologies

- Supplemental Resources

- Live Demonstration of Tools

Goals for Today's Presentation

1. Provide an overview of free automated testing tools

2. Provide pros and cons of each

3. Provide real-world examples of accessibility

4. Sharing of resources to assist writers, designers and developers to better understand, and create, accessible online content

Today's Presenters

Rayianna Daniels, Assistive Technology Support Specialist, CIDI

Rayianna Daniels has a BS of Science in Computer Science, along with a background in web accessibility training, web accessibility evaluations, web development and IT support. She also provides training on a variety of applications and assistive technology solutions to Higher Ed institutions across the country.

John Toles, Digital Accessibility Specialist, CIDI

John Toles has been employed with Center for Inclusive Design and Innovation (CIDI) since 2016. He provides technical assistance and services through the CIDI Customer Support team to Higher Ed institutions across the country. He also develops and maintains several of CIDI internal and public-facing applications and works closely with the ICT Accessibility team to provide web accessibility evaluations, technical assistance and training.

ANDI

- ANDI = Accessible Name and Description Inspector

- Created by the Social Security Administration

- Can be saved as a bookmarklet in your browser

- When activated, it sits at the top of your active browser
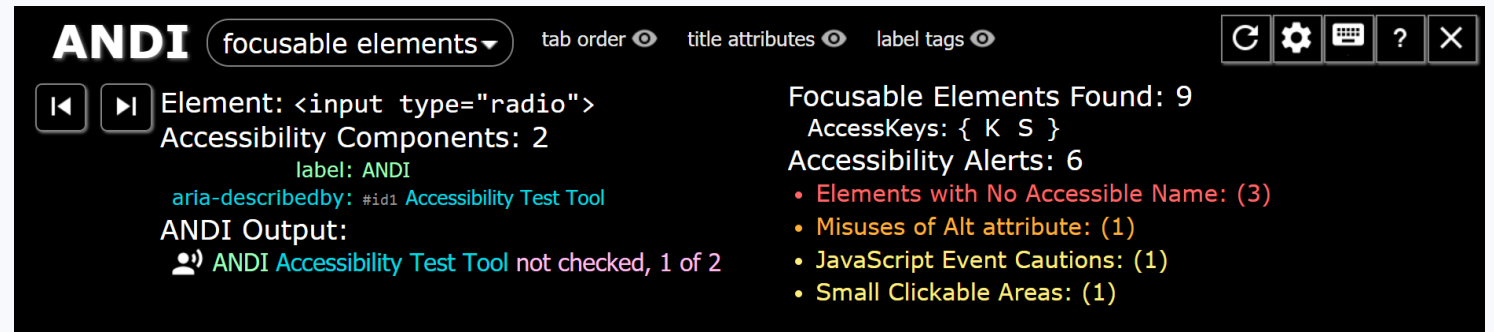
ANDI (Continued)

- Anticipates screen reader output

- Provides accessibility suggestions

- Highlights problem/interest areas

- Great for ensuring the overlooked areas are addressed

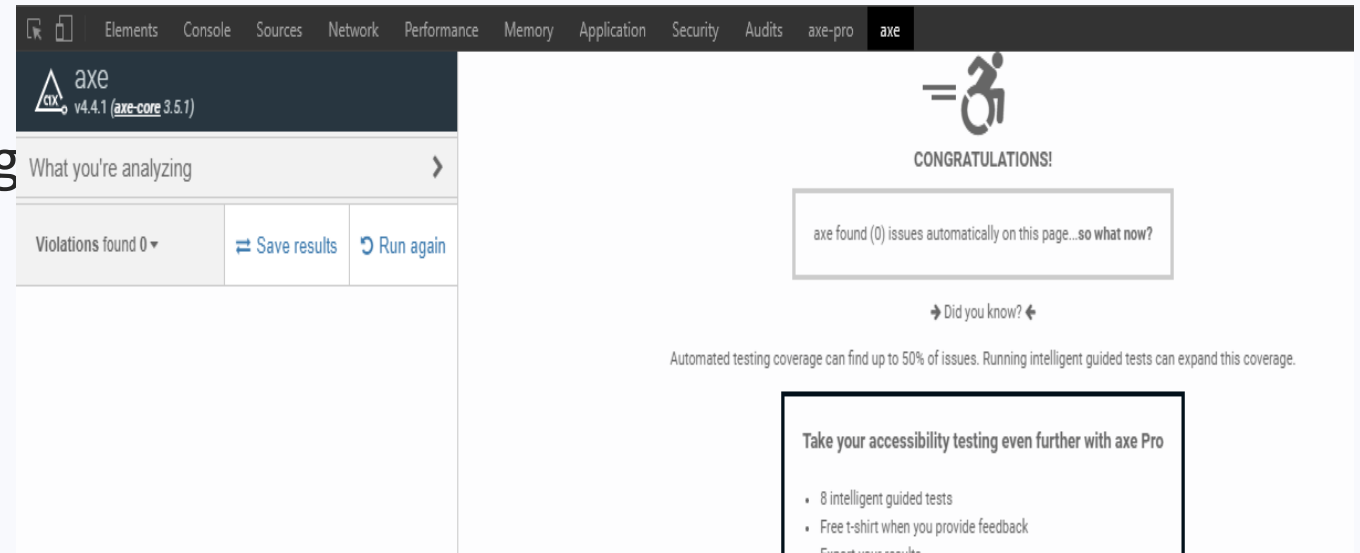# aXe by Deque

- Operates as an accessibility toolkit
- Built on an accessibility rules library
- Ties violations to their corresponding WCAG success criteria
- Browser extension that can be installed in Chrome and Firefox

aXe by Deque (Continued)

- Highlights and provides substantial supplemental information about violations

- Identifies which violations may require manual review

- Low percentage of false positives
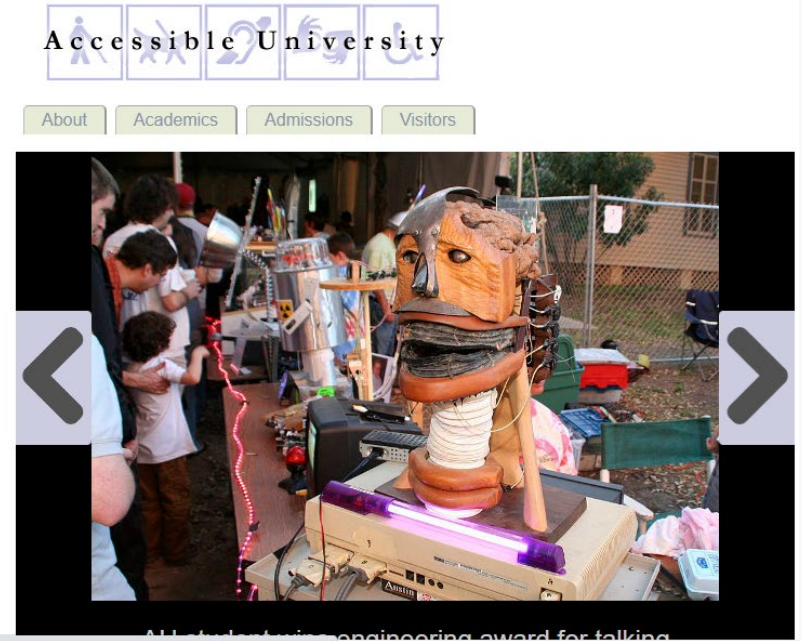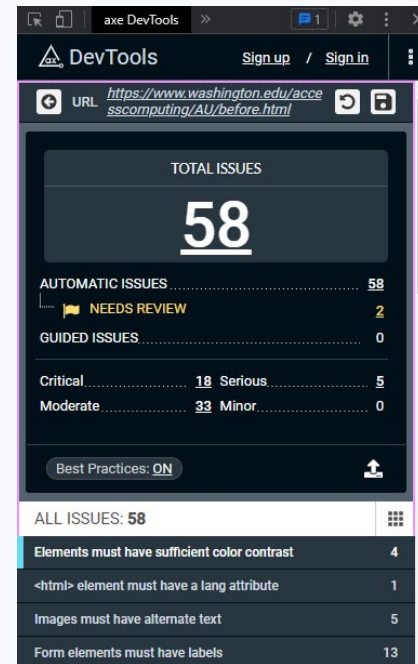
Bookmarklets

- Highlights roles, states, and properties of elements

- 12 bookmarklets

- Great for spot-checking elements

- Users can pick and choose which bookmarklets they would like to add

Colour Contrast Analyzer

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- Determines color contrast ratio of elements and their backgrounds

- Multiple ways to input color combinations

- Contains WCAG 2.1 indicators
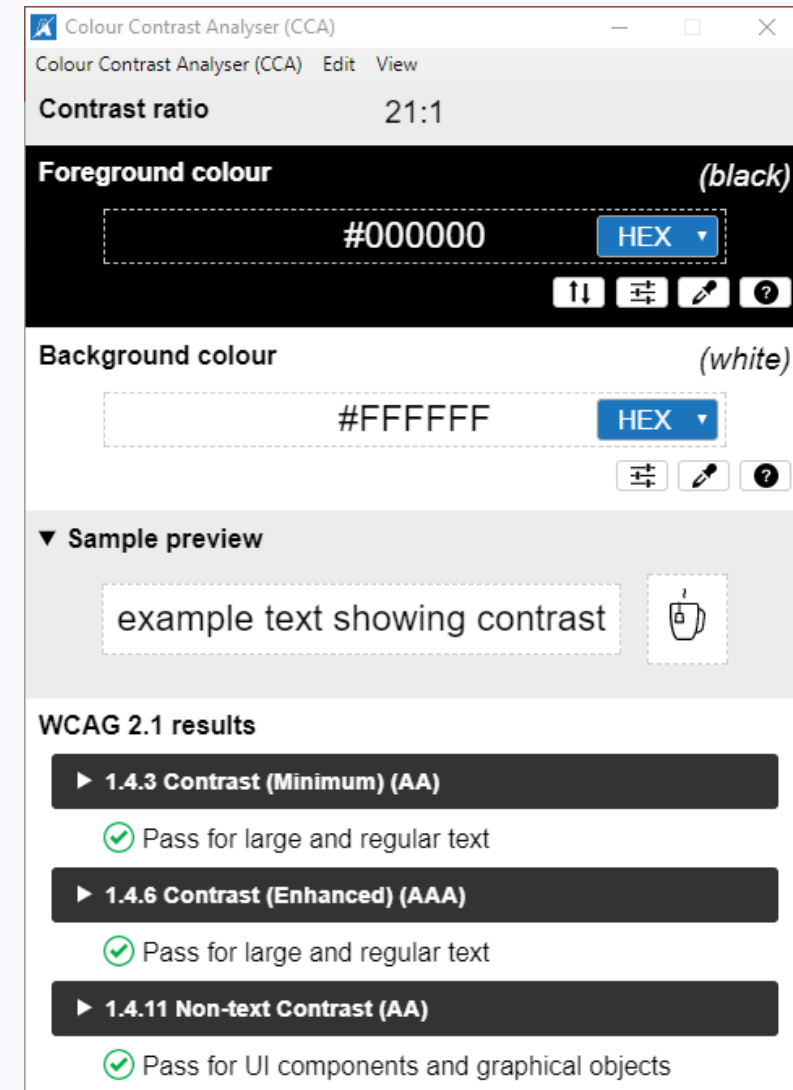
Colour Contrast Analyzer (Continued)

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- Includes color blindness indicators

- Local application

- Great for choosing colors in the design phase of your project
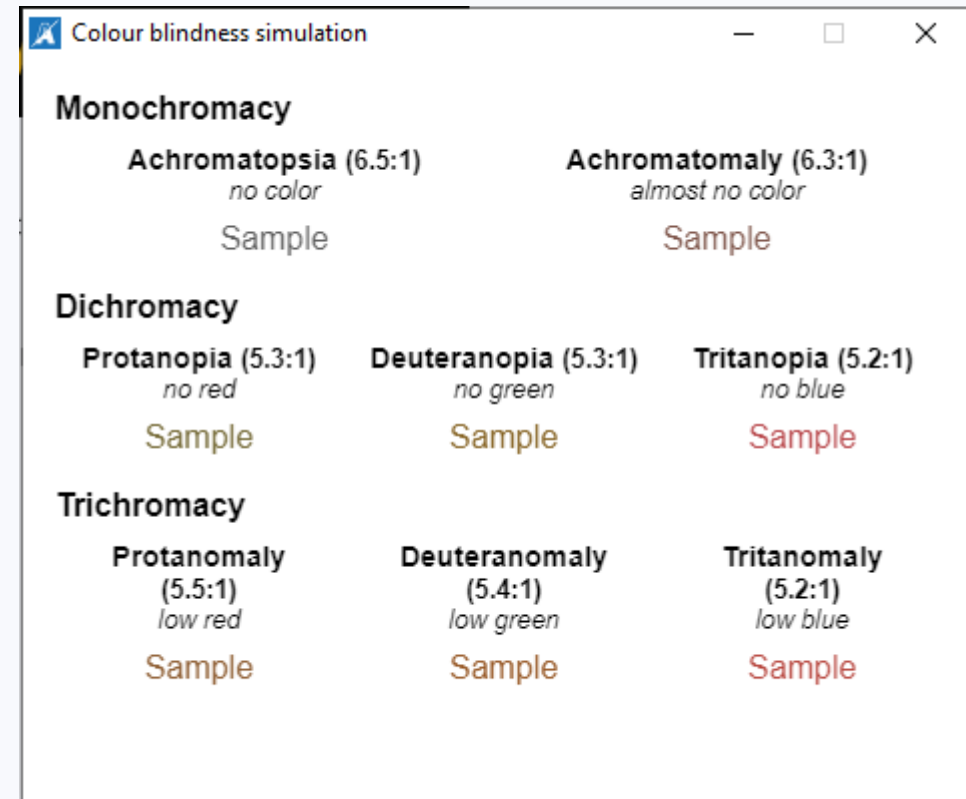
HTML Code Sniffer

- Checks HTML code and detects violations

- Ability to filter what errors are detected based on WCAG conformance levels

- Three levels of violation detection

- Brief report for each detected violation

HTML Code Sniffer (Continued)

- Completely JavaScript and can be extended by developer to create more detection points

- Notices and Warnings are great for reviewing commonly missed success criteria failures
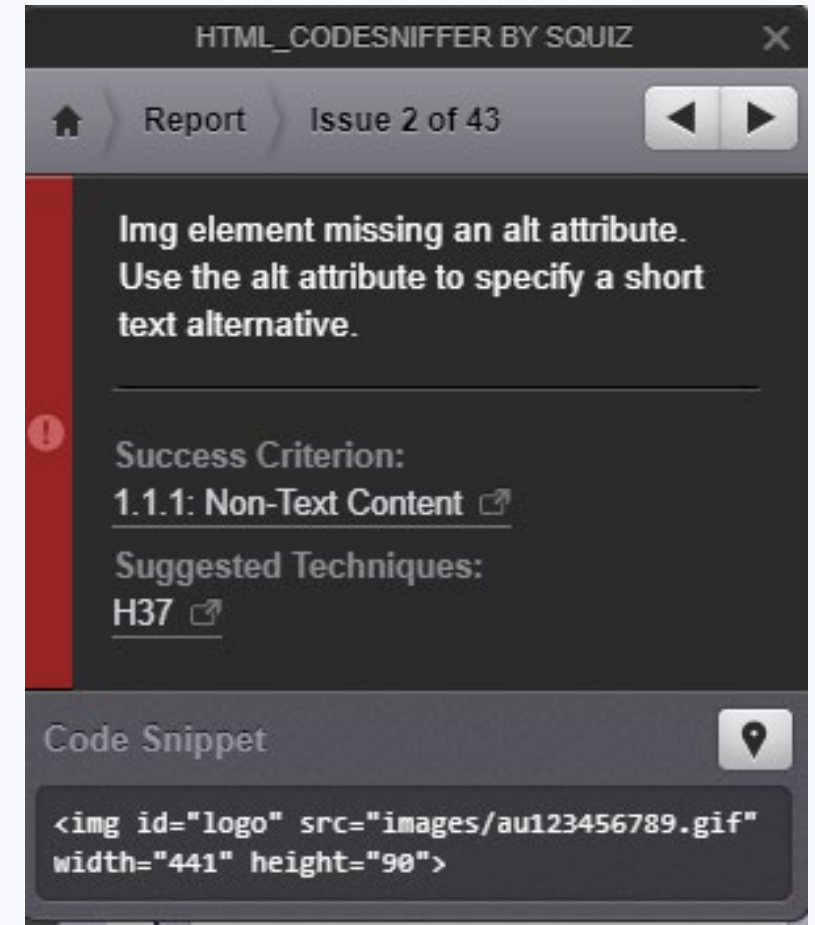
Nu Validator

- HTML validator

- Does not focus on accessibility

- Used in conjunction with a filtering script

  - Filters out issues that would not affect accessibility of the page

WAVE by WebAIM

- Multiple evaluation tools in one

- Specializes in identifying WCAG errors

- Promotes manual testing

- Identifies accessibility elements, features, provides alerts, and estimates color contrast ratio
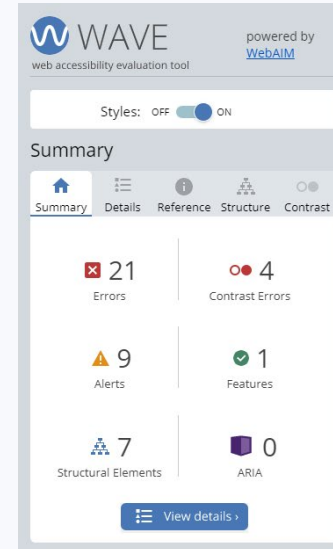
WAVE by WebAIM (Continued)

- Provides a large amount of information for each issue and their recommendation

- Has the potential to slow down browser if a large amount of errors, elements, and alerts are found

Web Developer Extension

- Provides over 100 tools

- Primary feature is the ability to highlight various elements where accessibility issues are typically found

- Includes tools that can disable certain types of content on the page

Web Developer Extension (Continued)

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Forms menu

🚫 Disable 👤 Cookies 🖊 CSS 📋 Forms 🖼 Images ℹ️ Information 🟧 Miscellaneous 🖊 Outline 📏 Resize 🔧 Tools 🗔 Options

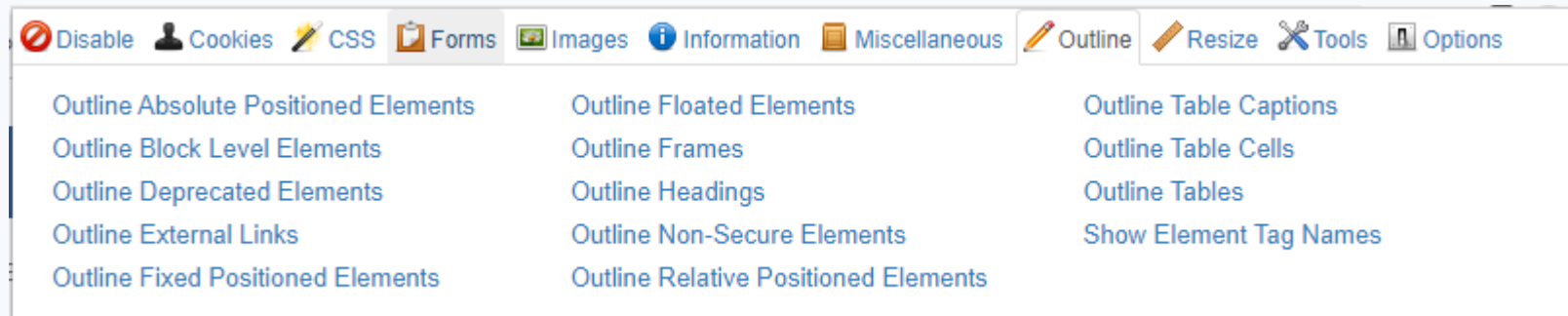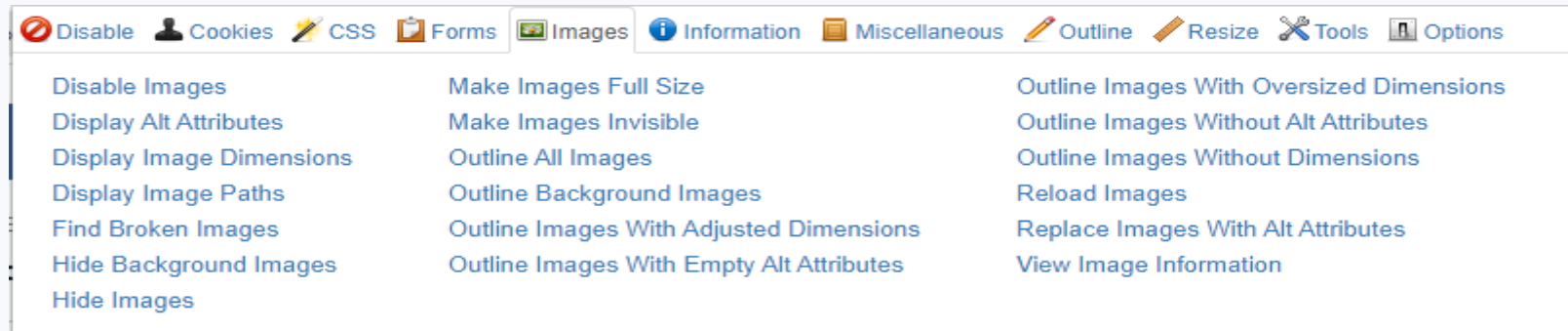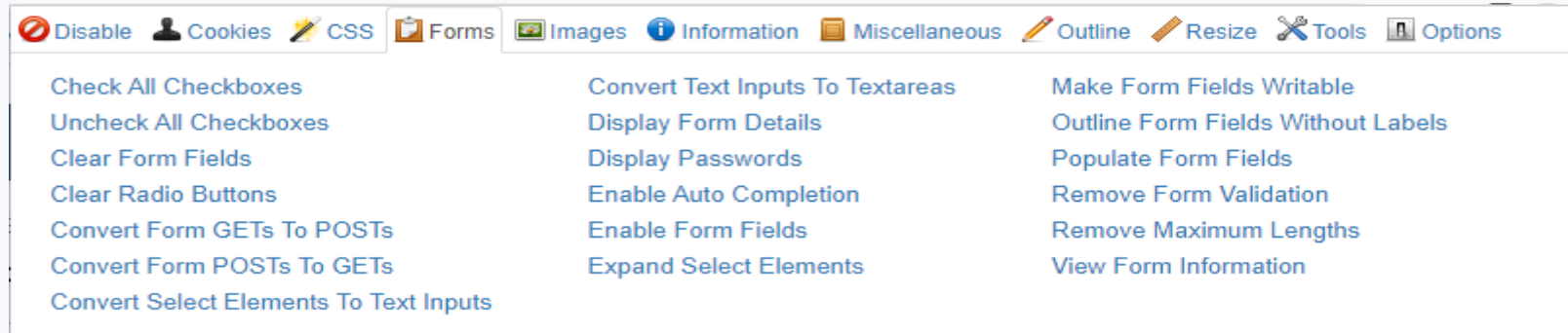|		
Check All Checkboxes	Convert Text Inputs To Textareas	Make Form Fields Writable
Uncheck All Checkboxes	Display Form Details	Outline Form Fields Without Labels
Clear Form Fields	Display Passwords	Populate Form Fields
Clear Radio Buttons	Enable Auto Completion	Remove Form Validation
Convert Form GETs To POSTs	Enable Form Fields	Remove Maximum Lengths
Convert Form POSTs To GETs	Expand Select Elements	View Form Information
Convert Select Elements To Text Inputs		

Images menu

🚫 Disable 👤 Cookies 🖊 CSS 📋 Forms 🖼 Images ℹ️ Information 🟧 Miscellaneous 🖊 Outline 📏 Resize 🔧 Tools 🗔 Options

Disable Images	Make Images Full Size	Outline Images With Oversized Dimensions
Display Alt Attributes	Make Images Invisible	Outline Images Without Alt Attributes
Display Image Dimensions	Outline All Images	Outline Images Without Dimensions
Display Image Paths	Outline Background Images	Reload Images
Find Broken Images	Outline Images With Adjusted Dimensions	Replace Images With Alt Attributes
Hide Background Images	Outline Images With Empty Alt Attributes	View Image Information
Hide Images		

Outline menu

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Outline Absolute Positioned Elements	Outline Floated Elements	Outline Table Captions
Outline Block Level Elements	Outline Frames	Outline Table Cells
Outline Deprecated Elements	Outline Headings	Outline Tables
Outline External Links	Outline Non-Secure Elements	Show Element Tag Names
Outline Fixed Positioned Elements	Outline Relative Positioned Elements	

Nu Validator vs HTML Code Sniffer

Nu Validator

- Does not have a focus on accessibility related issues

- Highlighting is the primary function

- Requires a new tab

HTML Code Sniffer

- Checks code for accessibility errors

- Provides suggestions/recommendations

- Operates in the tab of the site being evaluated

Web Dev. vs Bookmarklets

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Web Developer Extension

- Well over 100 tools

- Extension of browser

- Wide variety

Bookmarklets

- Limited but useful tools

- Option to choose between the bookmarklets

ANDI vs aXe vs WAVE

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ANDI

- Anticipates what a screen reader may say

- Highlights elements with a box

- Located above content on the page

aXe

- Located in the inspector tool

- Highlights elements with a box

WAVE

- Provides detailed descriptions and recommendations

- Flags identified elements, errors, alerts with a badge

- Located to the right of the content on the page

Recommended Testing Workflow

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Frequently Used:

- Bookmarklets

- HTML Code Sniffer

- Colour Contrast Analyzer

- aXe

- Nu Validator

Depends upon the site:

- WAVE

- Web Developer Extension

Supplemental Resources

- WCAG Checklist (https://www.w3.org/WAI/WCAG21/quickref/)

- W3 WAI Tutorial (https://www.w3.org/WAI/tutorials/)

Live Demonstration

Links to Tools

- ANDI (https://www.ssa.gov/accessibility/andi/help/install.html)

- aXe (https://www.deque.com/axe/)

- Colour Contrast Analyzer (https://www.paciellogroup.com/resources/contrastanalyser/)

- HTML Code Sniffer (http://squizlabs.github.io/HTML_CodeSniffer/)

- Nu Validator (https://validator.w3.org/nu/)

- WAVE (http://wave.webaim.org/extension/)

- Web Developer Extension (https://chrispederick.com/work/web-developer/)

- Javascript Bookmarklets for Accessibility Testing

  (https://www.pauljadam.com/bookmarklets.html)

Questions???