Evaluating the Accessibility of Web Content with Free, Web-Based Tools

Melissa Green, @mbfortson
The University of Alabama

Kimberly Smalley, @kcsmalley
The University of Alabama

HIGHEDWEB ASSOCIATION ALABAMA

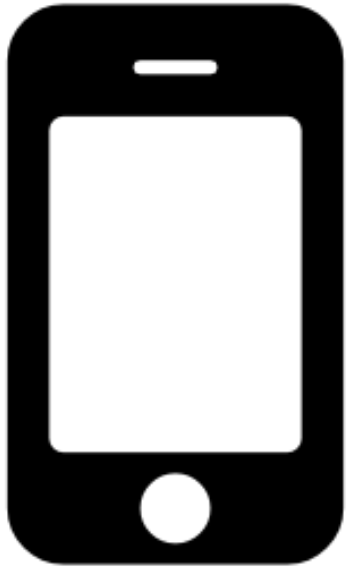
The Case for Accessibility

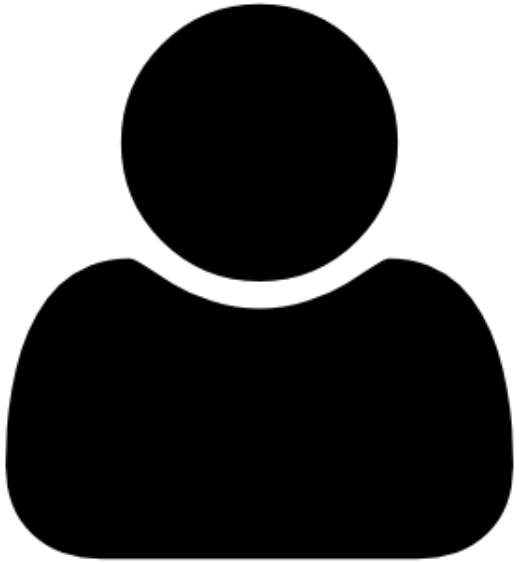
"The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect." – Tim Berners-Lee

The Case for Accessibility

"To enable persons with disabilities to live independently and participate fully in all aspects of life, States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others… to information and communications, including information and communications technologies and systems." – UNCRPD

Designing for accessibility benefits everyone





In higher education

- Applicable laws
  - Rehabilitation Act of 1973
    - Section 504
    - Section 508
  - Americans with Disabilities Act (ADA)

In higher education

TLC Accessibility Update, Dr. Rachel Thompson

- Requirements
  - Departments of Justice & Education
    - Dear Colleague (2010)
    - Universities charged with planning for accessible technology tools, services, and information
  - "Accessible"
    - W3C Web Content Accessibility Guidelines (WCAG), 2.0 A/AA/AAA

Web Accessibility Evaluation Tools

Evaluation tools that can be used to determine whether or not web content is accessible.

Human testing is required

- No automated evaluation tool can tell you if your site is accessible, or even compliant.
- Human testing is always necessary.

Standards and guidelines used

- Most commonly used:
  - WCAG 2.0 A/AA/AAA
  - Section 508

Free vs. commercial

- Knowledge of users
- Size of the site being examined
- Information need

Platform

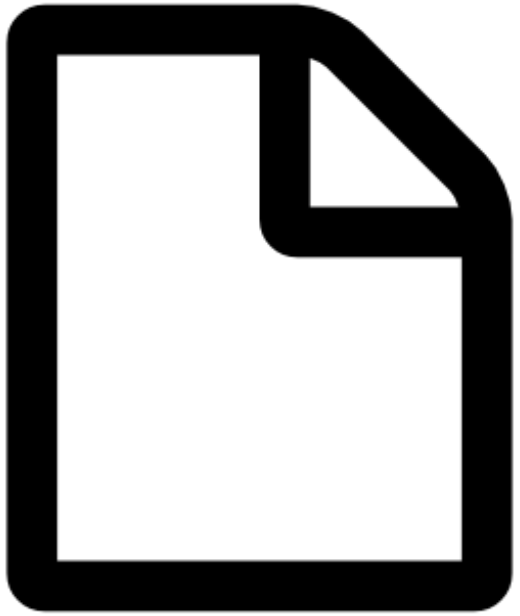
- Online service
- Within a browser
- Within an authoring tool
- Installed on hard drive or server

Repair functionality

- Evaluation only
- Evaluation and repair

Report style

- Text-based
- Graphic/icon-based
- Evaluation and Reporting Language (EARL)



Report style: text-based

Accessibility Review

Export Format: PDF ▼ Report to Export: All ▼ Get File

Accessibility Review (Guidelines: WCAG 2.0 (Level AA))

Known Problems(14) | **Likely Problems (0)** | **Potential Problems (433)** | **HTML Validation** | **CSS Validation**

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

Success Criteria 1.1.1 Non-text Content (A)

Check 238: `input` element has `alt` attribute.

Repair: Remove the `alt` attribute from all `input` elements except those with a `type` attribute value of "image".

Line 49, Column 1:

```
<input type="text" name="q" id="q" onblur="this.value=(this.value=='') ? 'SEARCH' : this.value;" onf ...
```

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

Success Criteria 1.3.1 Info and Relationships (A)

Check 57: `input` element, `type` of "text", missing an associated label.

Repair: Add a `label` element that surrounds the control's `label`. Set the `for` attribute on the `label` element to the same value as the `id`

Report style: graphic/icon-based

h1 **News**

alt *News*

X2

Bell Named UA President | VIDEO

UA, YMCA, PARA Honor 'Swim to the Top' Participants

UA-Led Expedition Turns up More Fossilized Animal Remains

UA's Leeper Honored for Statistical Contributions to Medicine, Public Health

h1 **Events**

alt *Events*

X2

1 JUL — **Using Tegrity in Blackboard**
Wed July 1, 9:00 a.m.

1 JUL — **P-Card Works Software**
Wed July 1, 1:30 p.m.

3 JUL — **Classes Dismissed - Independence Day**
Fri July 3, All Day

7 — PIVOT – Id… Funding

<code>

h1 **Spotlight**

alt *Thumbnail*

alt=alt *Thumbnail*

alt=alt *Thumbnail*

alt *Thumbnail*

alt *Sp…*

h3

A UA re… called wizards, can guide water m… protecti… urce.

alt=alt *Thumbnail*

alt *Thumbnail*

h3 Spe… in Cuba

Six UA … after sp… through… with new eyes on the island

alt *Thumbnail*

Report style: EARL

```
<?xml version="1.0" encoding="UTF-8" ?>

<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:earl="http://www.w3.org/ns/earl#"
  xmlns:dct="http://purl.org/dc/terms/"
  xmlns:cnt="http://www.w3.org/2007/content#"
  xmlns:ptr="http://www.w3.org/WAI/ER/EARL/pointers#"
  xml:base="http://www.example.org/earl/report#">

  <earl:Assertion rdf:ID="assert">
    <earl:result rdf:resource="result" />
    <earl:test rdf:resource="http://www.w3.org/TR/2008/NOTE-WCAG20-TECHS-20081211/F65" />
    <earl:subject rdf:resource="http://example.org/resource/index.html" />
    <earl:assertedBy rdf:resource="http://example.org/cooltool/" />
  </earl:Assertion>

  <earl:Software rdf:about="http://example.org/cooltool/">
    <dct:title xml:lang="en">Cool Tool accessibility checker</dct:title>
    <dct:hasVersion>1.0.c</dct:hasVersion>
```

Which tool is best?

- Depends on your skills set and web responsibilities
- Often best to use a variety of tools

Automated Tools: Strengths & Limitations

"No automated evaluation tool can tell you if your site is accessible, or even compliant." – WebAIM

Strengths

- Efficiency
- Can catch:
  - Missing alt text
  - form controls without labels
  - (many) contrast errors

Strengths

"Automated testing tools excel when the decision logic can be boiled down to a simple yes or no answer, and that answer can be determined using machine accessible data."

Limitations

- Pass != accessible
- May give a false sense of security
- May inaccurately portray a site or app as being fully accessible

Limitations

- Require human review:
  - Logical meaning
  - Logical flow
  - Tab order
  - Visible input focus
  - Keyboard access
  - Meaningful text alternatives

Limitations

Bottom line

"To be effective, accessibility checkers should form part of a wider process. A comprehensive approach, including testing by people with different abilities and skills as well as evaluation by individuals knowledgeable in the field of accessible Web design is best."

Web Accessibility Evaluation Tools List

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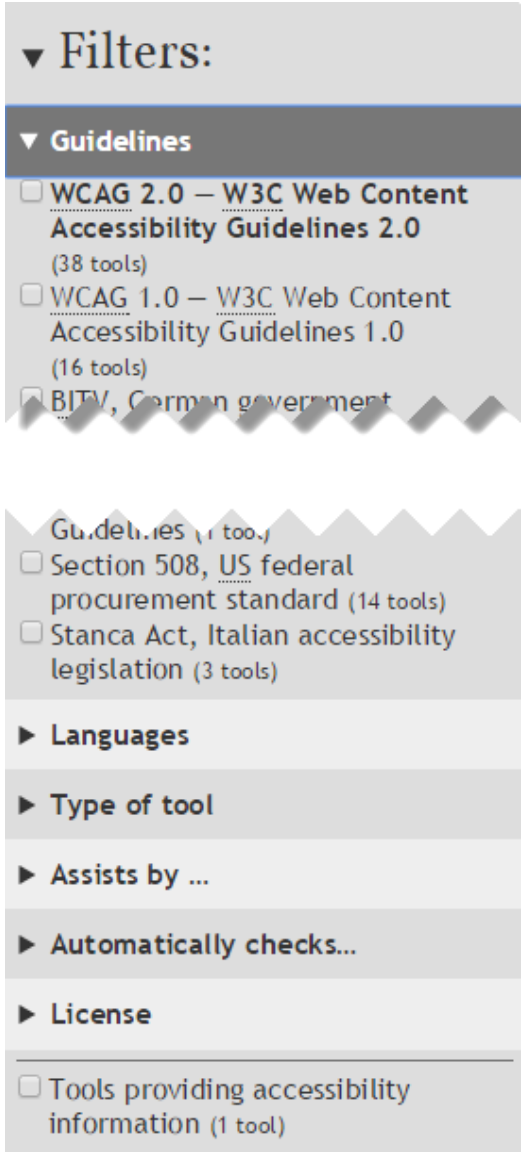


- Guidelines
- Languages
- Type of tool
- Assists by…
- Automatically checks…
- License
- Tools providing accessibility info

http://www.w3.org/WAI/ER/tools/

Web Accessibility Evaluation Tools List

FireEyes *by Deque Systems Inc.*

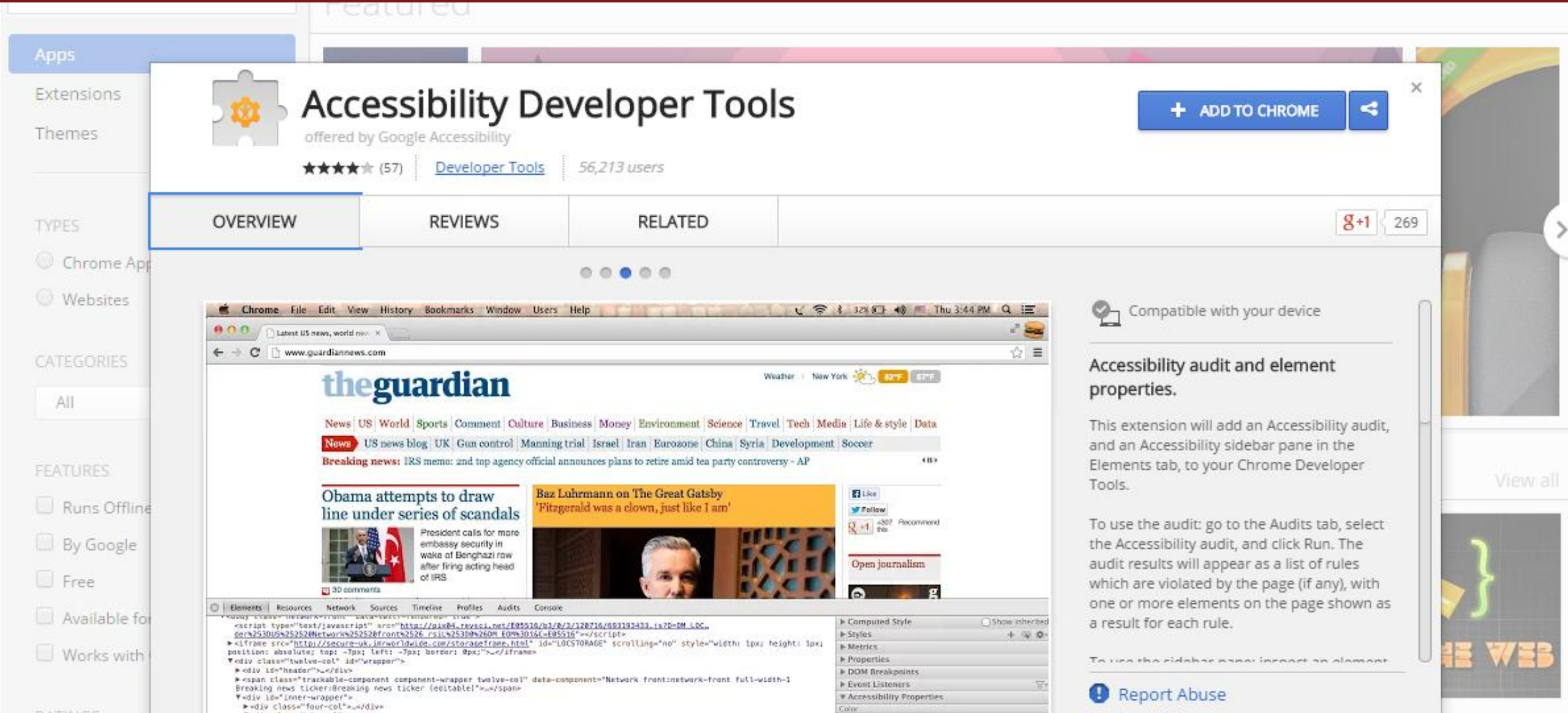
FireEyes is a Firefox plugin that integrates with Firebug and allows developers, QA engineers and subject matter experts to test individual and multiple pages for Section 508 and WCAG 2 accessibility issues. It has built-in color contrast analysis, screen reader simulation and support for DHTML pgs.

http://www.deque.com/products/fireeyes/, Version: 2, Released: 2010-Jun-01

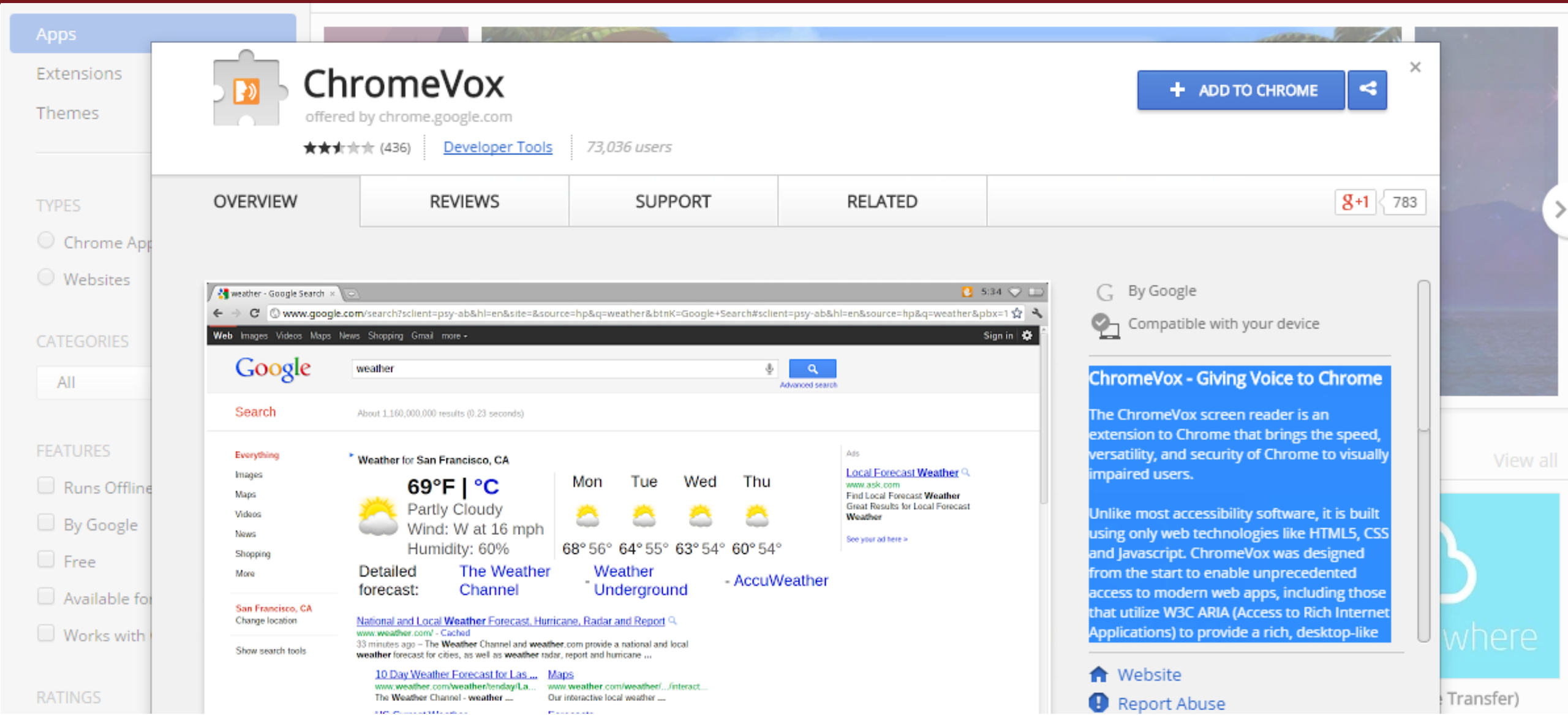
▼ **Detailed Information** about "FireEyes"

- **Guidelines:** WCAG 2.0 — W3C Web Content Accessibility Guidelines 2.0, Section 508, US federal procurement standard
- **Assists by:** Generating reports of evaluation results, Providing step-by-step evaluation guidance, Displaying information within web pages, Modifying the presentation of web pages
- **Automatically checks:** Single web pages, Groups of web pages or web sites, Restricted or password protected pages
- **Languages:** English, Japanese (日本語)
- **Browser plugins:** Firefox, Internet Explorer ≥ 9
- **APIs:** Java, Web service (Rest API, Webhook...)
- **Supported formats:** CSS, HTML, XHTML, PDF
- **Online Service:** Hosted service, Server installation, Browser plugin
- **Report formats:** HTML, CSV, Exports issues to JIRA and HP ALM
- **License:** Free Software, Commercial, Enterprise
- **Accessibility information:** (none provided)
- **Information updated:** 2014-Nov-20

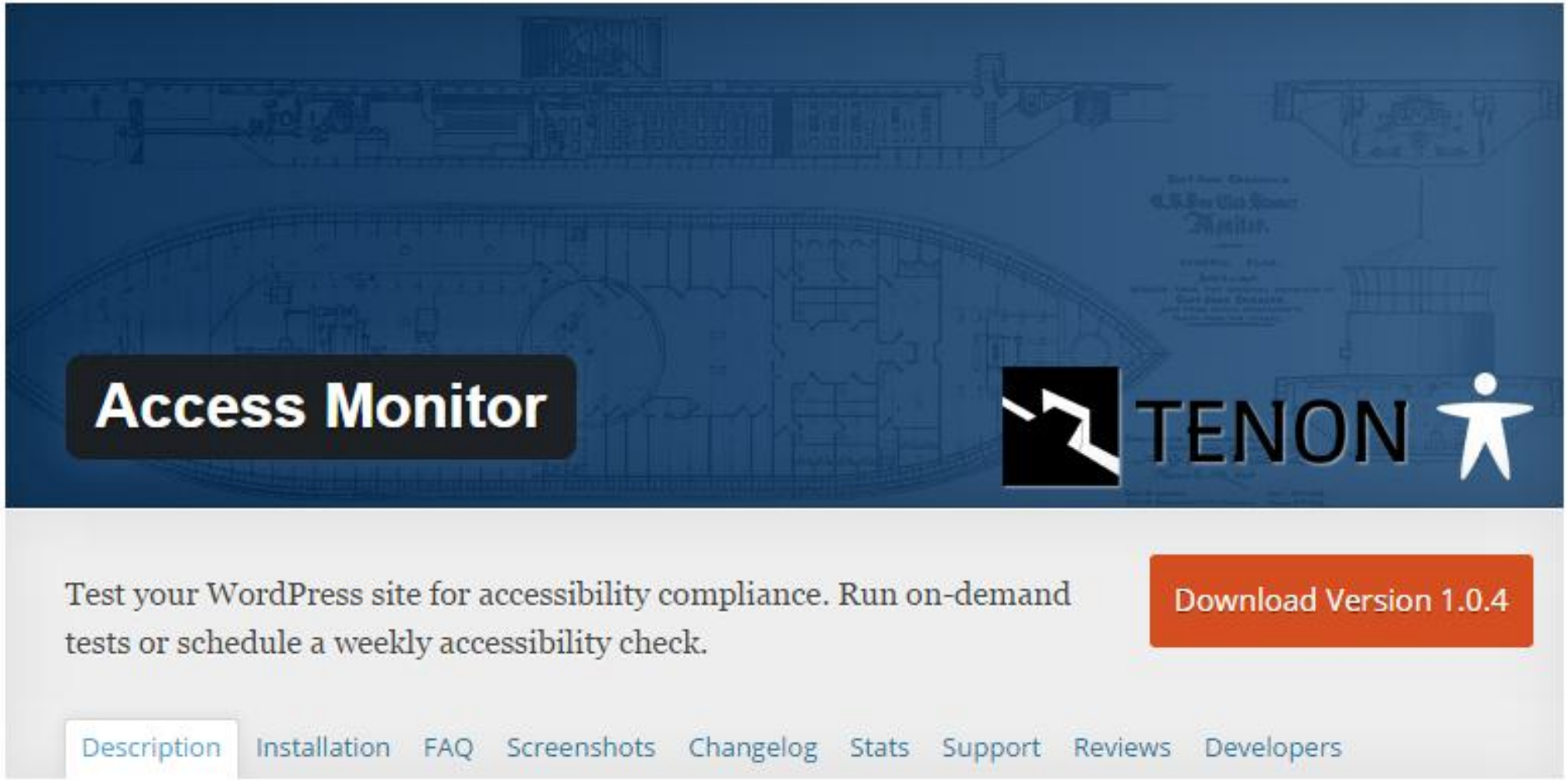
Browser Extensions



Browser Extensions



WordPress


Access Monitor
TENON
Test your WordPress site for accessibility compliance. Run on-demand tests or schedule a weekly accessibility check.
Download Version 1.0.4
Description
Installation
FAQ
Screenshots
Changelog
Stats
Support
Reviews
Developers

WordPress

WP Accessibility
WP Accessibility fixes common accessibility issues in your WordPress site.
Download Version 1.4.1
Description
Installation
FAQ
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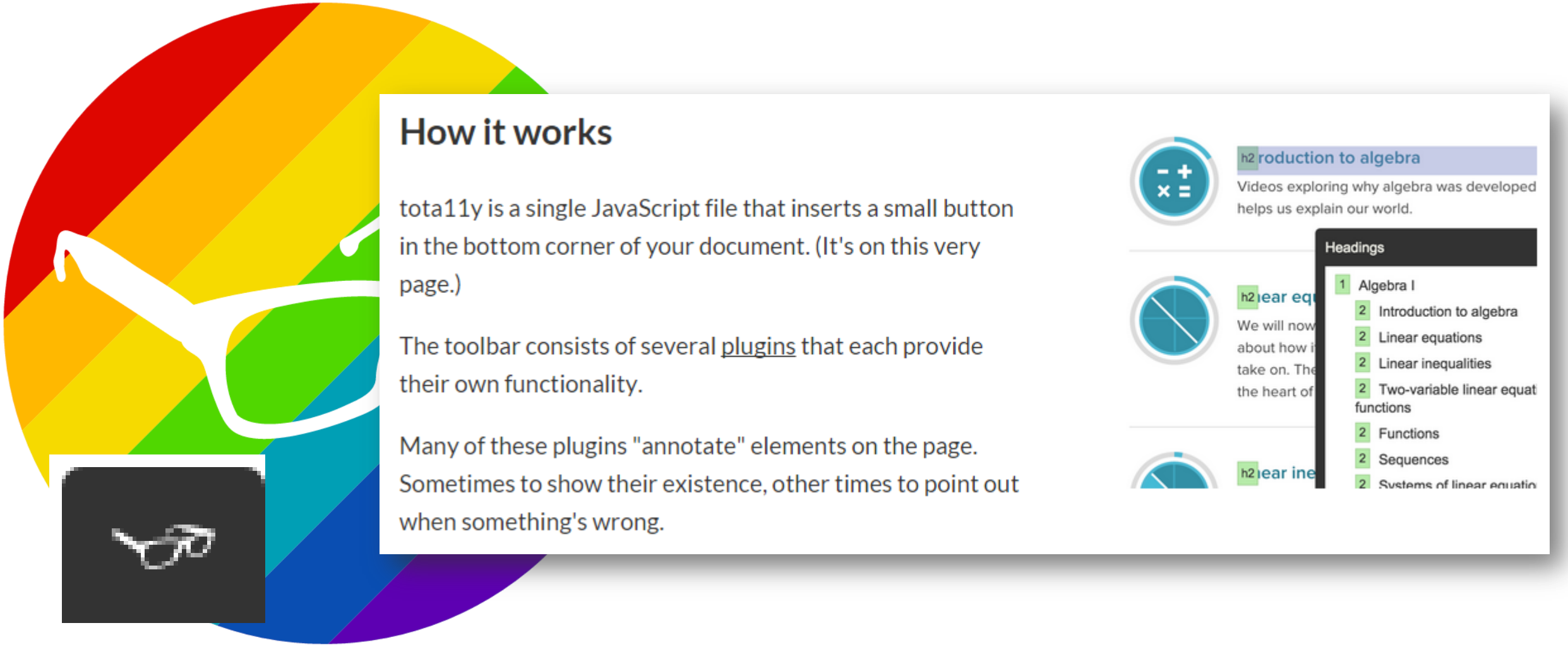
tota11y


How it works
tota11y is a single JavaScript file that inserts a small button in the bottom corner of your document. (It's on this very page.)
The toolbar consists of several plugins that each provide their own functionality.
Many of these plugins "annotate" elements on the page. Sometimes to show their existence, other times to point out when something's wrong.
h2 roduction to algebra
Videos exploring why algebra was developed helps us explain our world.
Headings
1 Algebra I
2 Introduction to algebra
2 Linear equations
2 Linear inequalities
2 Two-variable linear equat
functions
2 Functions
2 Sequences

aXe (The Accessibility Engine)

Web Accessibility Evaluation Tool

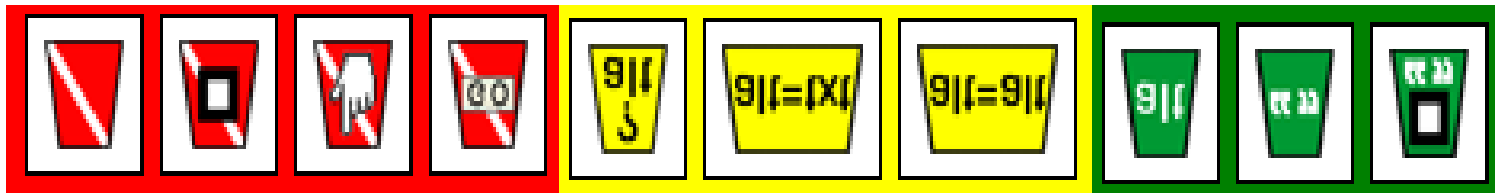
"WAVE is developed and made available as a free community service by WebAIM. Originally launched in 2001, WAVE has been used to evaluate the accessibility of millions of web pages."

WAVE demo

WAVE = Web Accessibility Evaluation Tool

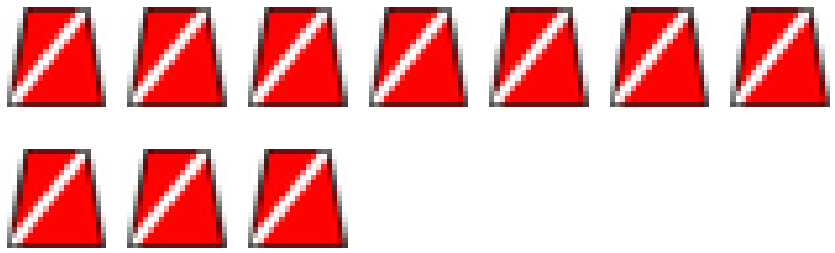
http://wave.webaim.org

WAVE Icons



Errors (52)

10 X Missing alternative text



Documentation

Errors
Missing alternative text

What It Means
Image alternative text is not present.

Why It Matters
Each image must have an alt attribute. Without alternative text, the content of an image will not be available to screen reader users or when the image is unavailable.

How to Fix It
Add an alt attribute to the image. The attribute value should accurately and succinctly present the content and function of the image. If the content of the image is conveyed in the context or surroundings of the image, or if the image does not convey content or have a function, it should be given empty/null alternative text (alt="").

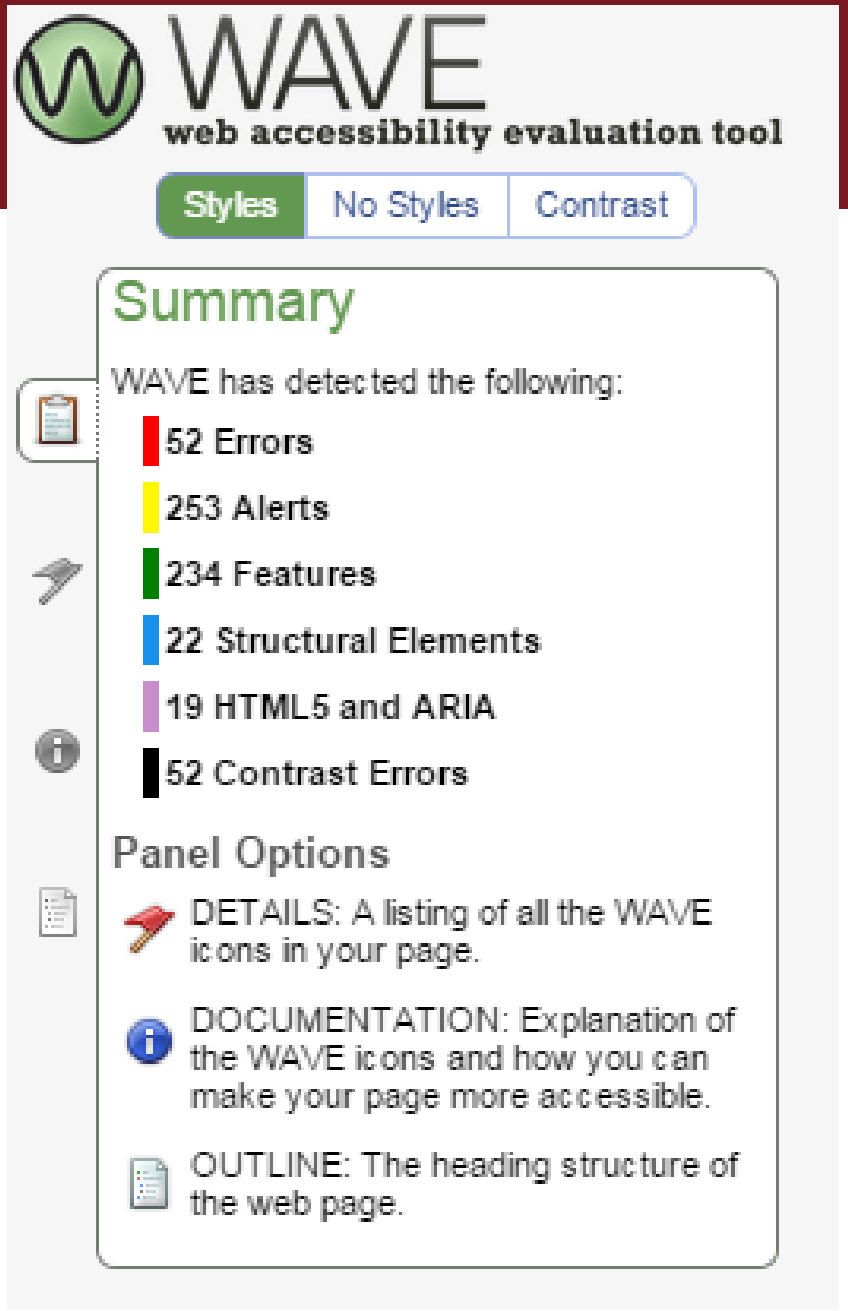
The Algorithm... in English
An image does not have an alt attribute.

Standards and Guidelines
- Section 508 (a)
- 1.1.1 Non-text Content (Level A)

Icon index

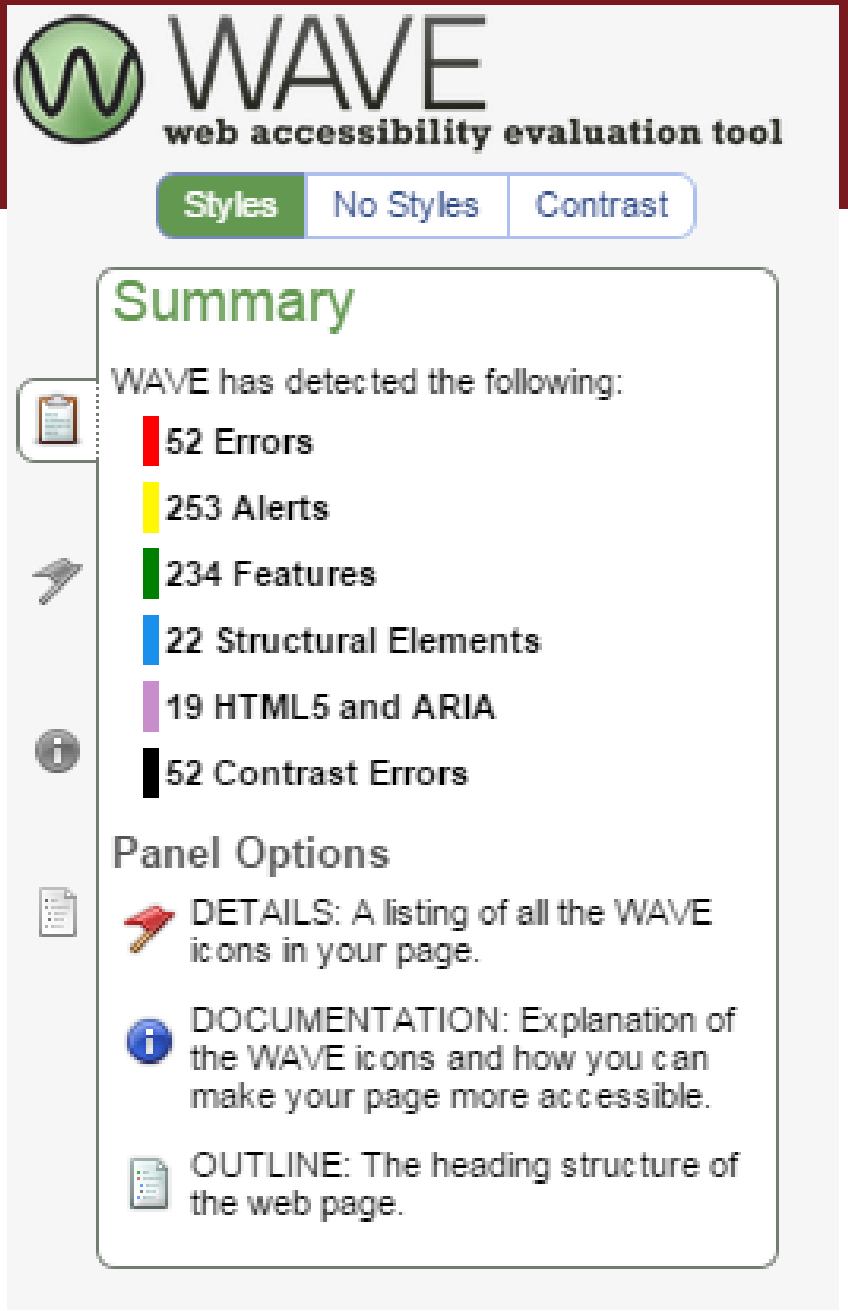
Sidebar

- Three Views
  - Styles
  - No styles
  - Contrast



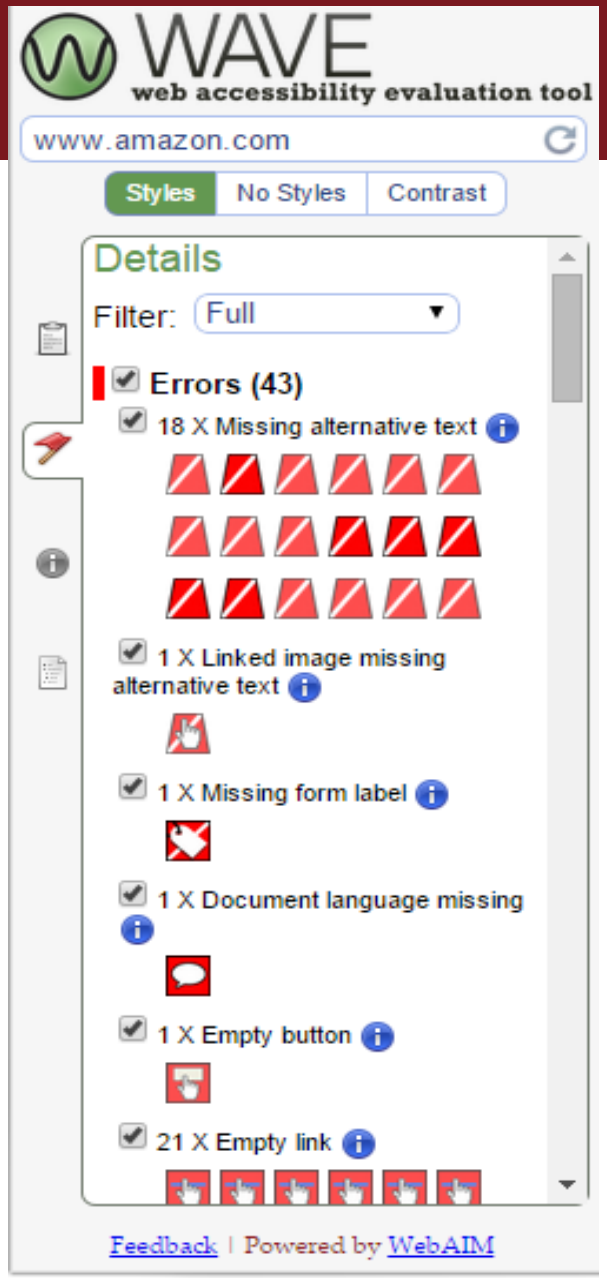
Sidebar

- Summary
  - Errors
  - Alerts
  - Features
  - Structural elements
  - HTML5 and ARIA
  - Contrast Errors



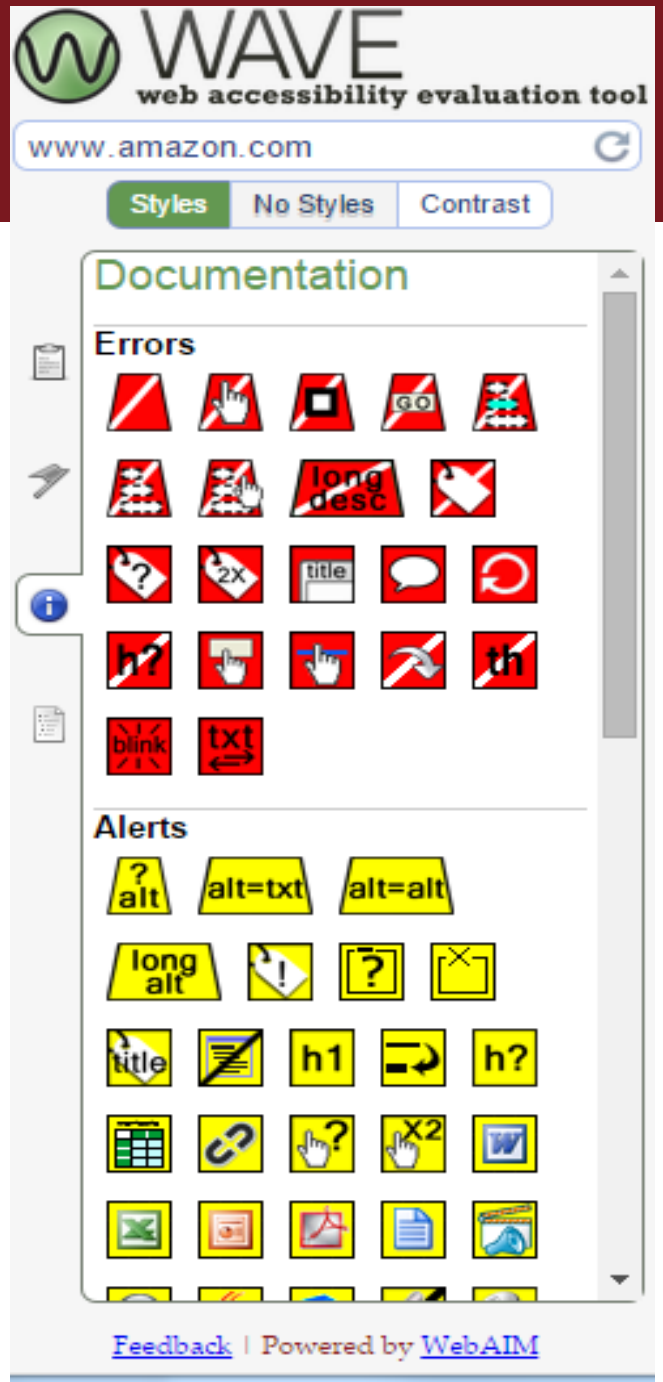
Sidebar

- Details - A listing of all the WAVE icons in your page.
- Filters: Full, AA, A, 508
- Select “i” to go to relevant documentation



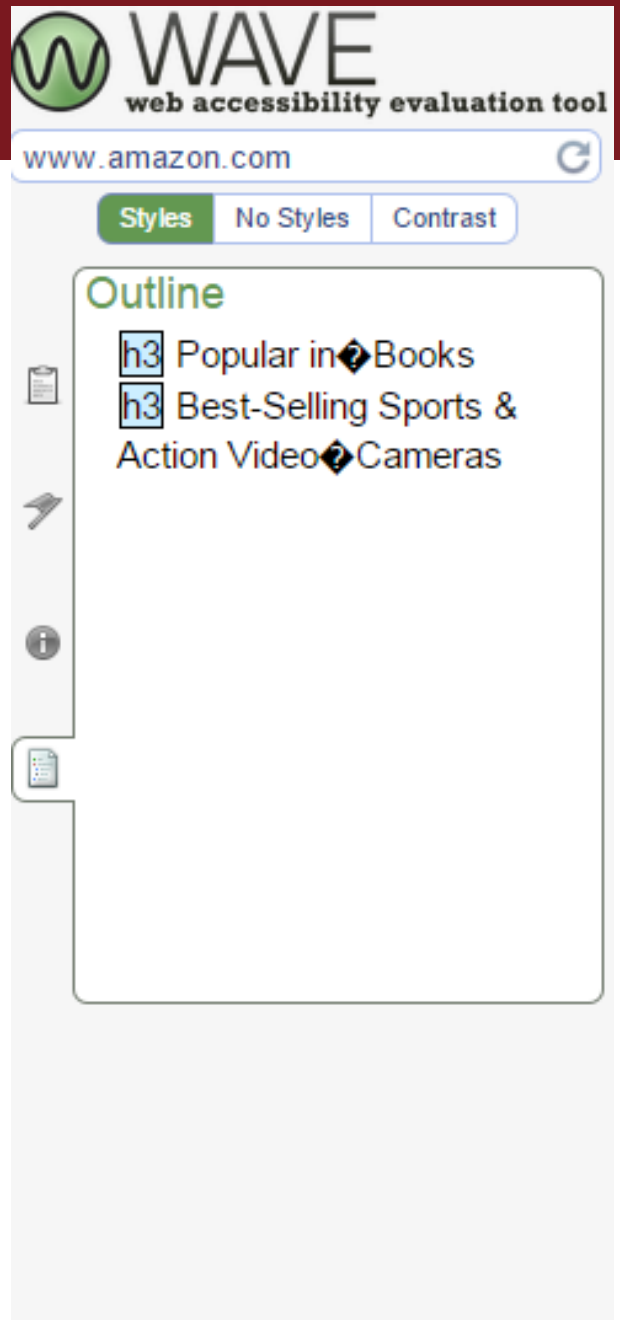
Sidebar

- Documentation - Explanation of the WAVE icons and how you can make your page more accessible.

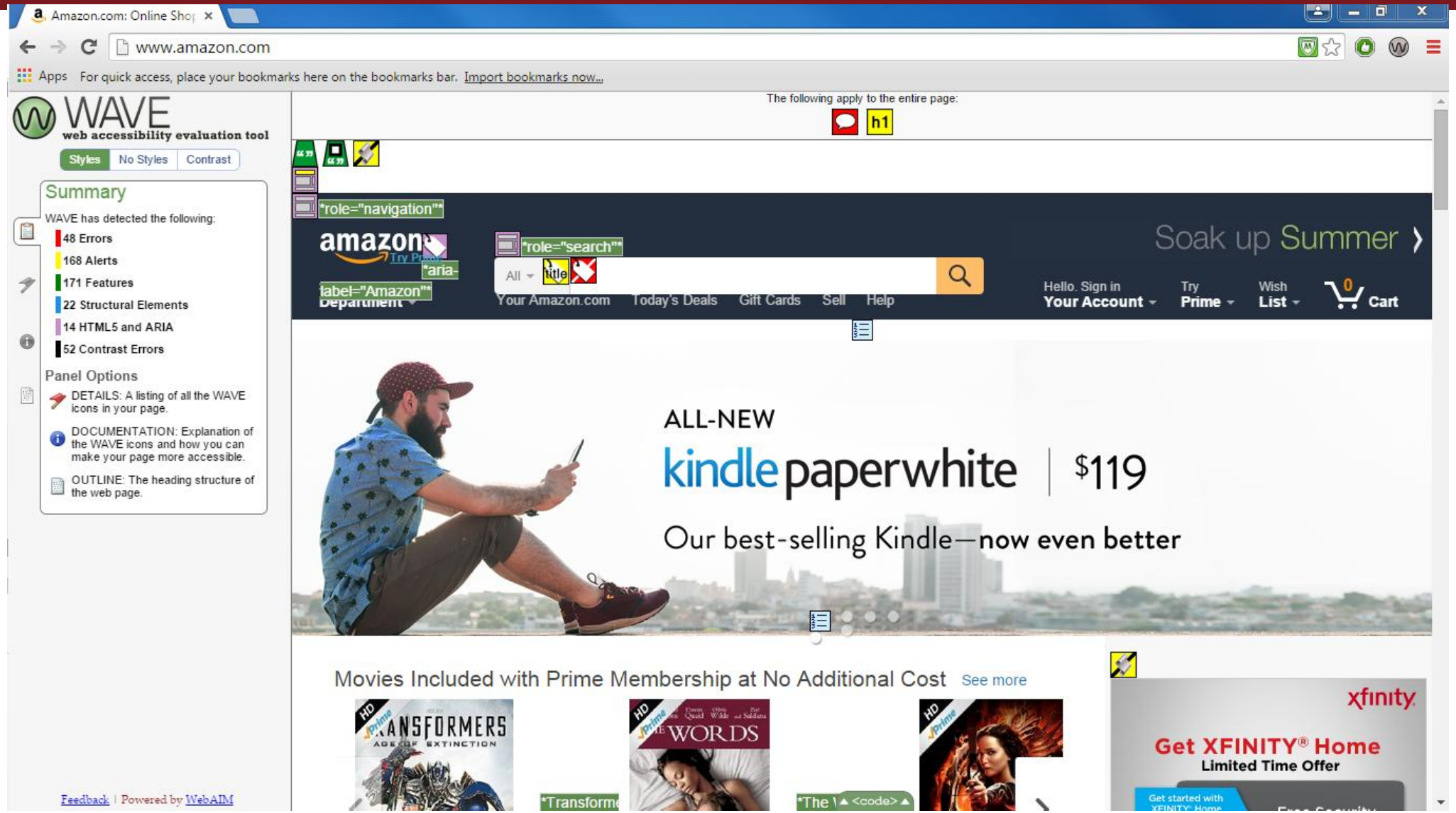


Sidebar

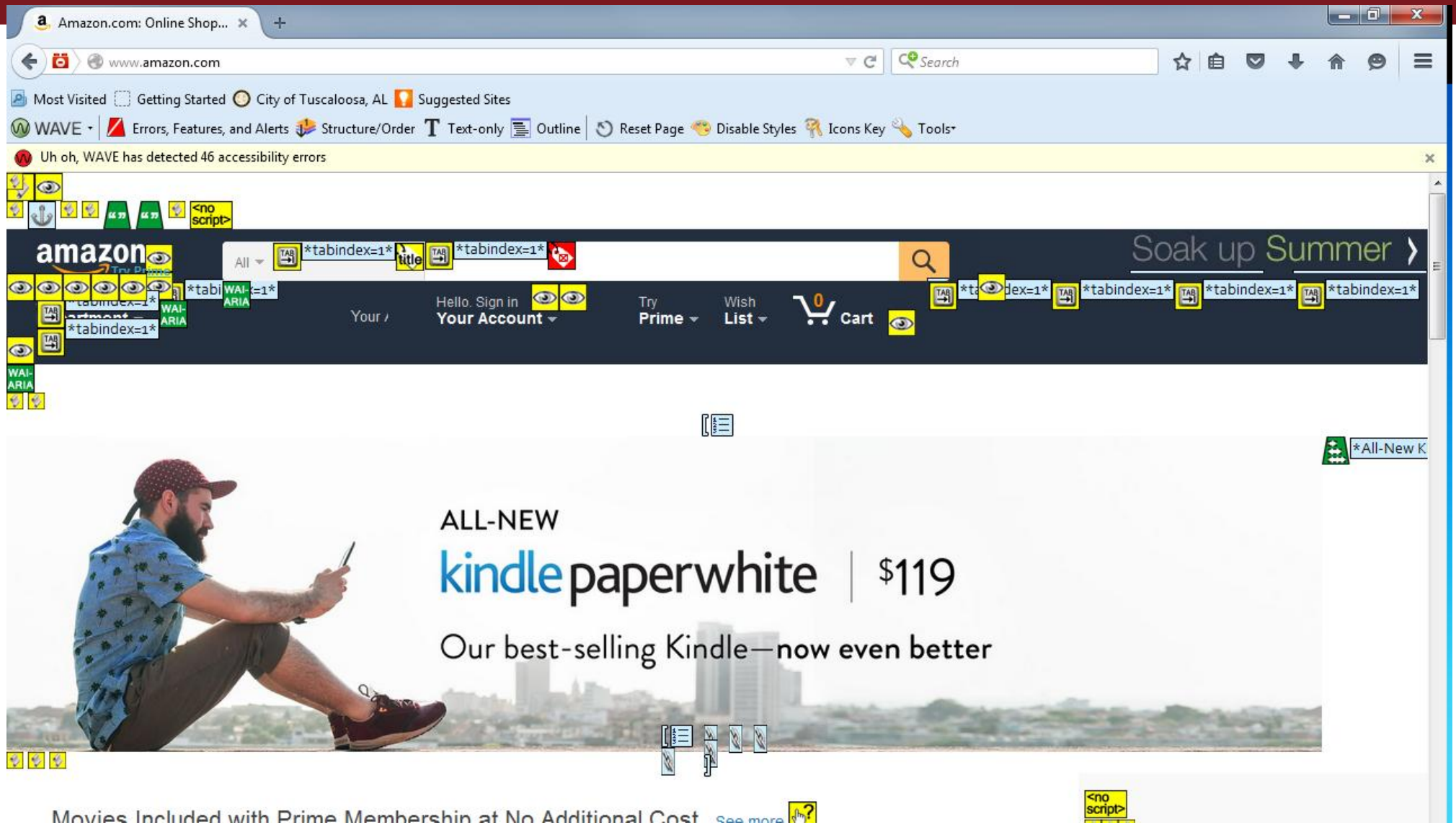
- Outline - The heading structure of the web page.



Chrome Extension



Firefox Toolbar



Differences

Web Service

- Submit a web page address.
- WAVE server downloads content and a custom version of Firefox renders page with CSS applied.
- The virtual page is checked against WAVE rules.
- The original page is loaded.
- Icon and report data loaded.
- WAVE icons and descriptions are inserted into the original page and interface.

Extension/Toolbar

- Evaluate content directly within browser
- No info sent to WAVE server (“100% private and secure”)
- Can check intranet, password-protected, dynamically generated, or sensitive web pages
- Evaluate the rendered version of your page, locally displayed styles and dynamically-generated content from scripts can be evaluated.

WAVE API

- The WAVE API can now be licensed as a stand-alone, installable product.
- For more information: http://wave.webaim.org/api/

Let’s create accessibility.

“Disability is a phenomenon of the experience that occurs by the individual intersecting with the environment.”

– Valerie Fletcher

Resources

On the HighEdWeb Alabama site & at bit.ly/hewebAL