

Automated WCAG 2.1 A/AA Analysis & Web Developer Guide



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for
*DEMO.SIMPLYVOTING.COM***

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Introduction

The Department of Justice (DOJ) has proclaimed that websites are a public accommodation and access to them falls under Titles II and III of the Americans with Disabilities Act (ADA). What this means is, websites need to be accessible to all users, including those relying on audio alternatives or assistive technology such as screen readers.

In an effort to work toward a globally uniform standard, The Web Accessibility Initiative (WAI) was created by the Worldwide Web Consortium (W3C). The standards outlined by this group are recognized as the international guidelines for website accessibility. These guidelines, which are collectively called the Web Content Accessibility Guidelines (WCAG), detail how to make websites accessible to all individuals with disabilities. The DOJ recognizes WCAG 2.1 Level A/AA as the accepted standard in which to judge a website's accessibility.

People of all abilities use the Internet. For some, their disability is temporary, such as after an accident or while they recover from a surgical procedure; others have been living with their disability since birth; and others grow into their impairments with age. But the common thread is that all people must have equal access to the information that is found on websites and within mobile applications.

The W3C perhaps says it best on their website: The Web is fundamentally designed to work for all people, whatever their hardware, software, language, culture, location, or physical or mental ability. When the Web meets this goal, it is accessible to people with a diverse range of hearing, movement, sight, and cognitive ability.

The impact of disability is radically changed on the Web because the Web removes barriers to communication and interaction that many people face in the physical world. However, when websites, web technologies, or web tools are badly designed, they can create barriers that exclude people from using the Web.

<https://www.w3.org/standards/webdesign/accessibility>

In addition to meeting this basic human right and being compliant with the ADA regulations, accessible websites and mobile applications have other benefits as well, such as:

Financial - Why would anyone purposely keep a potential customer from buying their product or service? That's exactly what's happening if a website can't be understood by someone using assistive technology, for example. If the user has difficulty navigating a website, they will be unable to make a purchase and that company will have lost business.

Social - One would be hard pressed to find a business that would intentionally choose to be known as an organization that does not support equal opportunity, or at least find it important enough to pursue. With social media spreading people's opinions like wildfire, the damage of a poor reputation can be hard to fix, and at times can be irreparable.

Technical - One advantageous consequence of making a website accessible, is that it forces a "clean up" of the site's code. This not only reduces ongoing maintenance time, but can also reduce the server load, speeding processes up overall.

Web Content Accessibility Guidelines (WCAG) 2.1

WCAG 2.1 consists of 13 guidelines with 50 checkpoints that are organized under four principles: perceivable, operable, understandable, and robust. For each guideline, there are testable success criteria, which are at three levels: A, AA, and AAA. Success Criteria assigned to Level A are essential. Criteria that impose a bit more developmental effort but provide better accessibility are assigned Level AA, and those with a higher burden upon content creators and are considered aspirational, are assigned Level AAA.

Principle 1: Perceivable

Information and user interface components must be presented to users in ways they can perceive. This means that users must be able to comprehend the information being depicted: It can't be invisible to all their senses.

The guidelines under this principle are:

- Provide text alternatives for non-text content.
- Provide captions and other alternatives for multimedia.
- Create content that can be presented in different ways without losing meaning.
- Make it easier for users to see and hear content.

Principle 2: Operable

User interface components and navigation must be operable: The interface cannot require interaction that a user cannot perform.

The guidelines under this principle are:

- Make all functionality available from a keyboard.
- Give users enough time to read and use content.
- Do not use content that causes seizures.
- Help users navigate and find content.
- Functionality is available beyond keyboard.

Principle 3: Understandable

Information and the operation of a user interface must be understandable: Users must be able to understand the information as well as the operation of the user interface.

The guidelines under this principle are:

- Make text readable and understandable.
- Make content appear and operate in predictable ways.
- Help users avoid and correct mistakes.

Principle 4: Robust

Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies: As technologies and user agents evolve, the content should remain accessible.

The guideline under this principle is:

- Maximize compatibility with current and future user tools.

About the Bureau of Internet Accessibility

The mission of the BoIA team is to make the Internet accessible to everyone. Our 21 years of experience and implementation of thousands of clients gives our team of 150 accessibility professionals the confidence to succeed in our mission.

The Bureau of Internet Accessibility (BoIA) has been helping eliminate the accessibility digital divide since 2001. Its reports, tools and services have assisted organizations in improving, maintaining and proving the accessibility of their websites. With services that include self-help tools, audits, training, remediation and implementation support, BoIA has the experience and expertise to ensure that your accessibility efforts are worthwhile and successful. Led by a strong management team with compliance, user interface design and software development expertise.

BoIA is committed to making the World Wide Web accessible to everyone. Over the years, BoIA has established a successful track record of helping clients from a vast array of industries in making their Web presence accessible to all end users. While website accessibility guidelines are standardized, each industry has its own specific concerns and requirements, calling for a somewhat unique approach. Some of the industries that BoIA has focused on include Online Retail, Travel & Hospitality; Local, State and Federal government; Non-Profit; Education; Financial and Healthcare.

The goal of the BoIA team is to help you achieve, maintain and prove your website's compliance. Our platform's tools, reports & services provide a complete view of a site's accessibility. BoIA supports you and your team in identifying, resolving and preventing website accessibility issues.

a11y[®] Scanning of demo.simplyvoting.com

BolA has been evolving its automated scanning technology since 2001. We've scanned and analyzed more than 35,000 websites with our patent-pending A11Y[®] Platform. The platform's server-scanning technology examines each public-facing web page for compliance with hundreds of WCAG 2.1 A/AA of rules. With the software, we list specific issues discovered under each of principles and include an explanation of why the issue is considered an accessibility issue. We cite specific examples from the website URLs, with code snippets to illustrate where the issues are located within the web page and provide suggestions on techniques to fix each issue.

The Bureau of Internet Accessibility platform a11y[®] was used to evaluate **demo.simplyvoting.com** for accessibility issues relating to the WCAG 2.1 A/AA criteria. BolA has organized the WCAG 2.1 A/AA Guidelines into testable components and elements, with specific rules implemented to test each. The rules are set with tolerance parameters, defined with rule breakage assessment values and organized into violation categories. The content from each scanned page is analyzed and processed according to type.

- **CSS** files are parsed as style-rules, and each style-rule is examined for violations in our CSS rule module.
- **JavaScript** files are parsed as lines of scripting code and certain keywords are targeted regarding violations in our SCRIPT rules module.
- **HTML** files are rendered as HTML DOM (Document Object Model) trees and each element and relationship of elements is examined for violations with our STRUCTURE, FORM, CSS, SCRIPT, MEDIA and TEXT rule modules.
- **Media** and other files are checked in accordance to the rule set.

The types and numbers of files encountered are logged and each page of file content is processed against the WCAG 2.1 A/AA rule set. All violations are organized into specialized databases and associated to its specific Checkpoints of WCAG 2.1 A/AA.

WCAG 2.1 A/AA Summary Chart

Checkpoints with failures detected are identified in the "issues discovered" column. The detail behind these failures are available in the next section.

| Principle | Guideline | Issues Discovered |
|-----------|-----------|-------------------|
|-----------|-----------|-------------------|

WCAG 2.1 A/AA a11y[®] Results of Scanning

The following is a listing of issues discovered under the four principles of WCAG 2.1 when scanning website **demo.simplyvoting.com**.

Principle 1 - Perceivable

Information and user interface components must be presentable to users in ways they can perceive. This means that users must be able to perceive the information being presented (it can't be invisible to all of their senses). Provide text alternatives for non-text content. Provide captions and other alternatives for multimedia. Create content that can be presented in different ways, including by assistive technologies, without losing meaning. Make it easier for users to see and hear content.

No page violations scored problems for this guideline.

Principle 2 - Operable

User interface components and navigation must be operable (the interface cannot require interaction that a user cannot perform). Make all functionality available from a keyboard and give users enough time to read and use content.

No page violations scored problems for this guideline.

Principle 3 - Understandable

Information and the operation of a user interface must be understandable. Users must be able to understand the information as well as the operation of the user interface. Make text readable and understandable and make the content appear and operate in predictable ways to help users avoid and correct mistakes.

Guideline 3.2 Predictable

Make Web pages appear and operate in predictable ways.

Principle 4 - Robust

Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. As technologies and user agents evolve, the content should remain accessible. The objective is to maximize compatibility with current and future user tools.

No page violations scored problems for this guideline.

Web Developer's Guide

The Bureau of Internet Accessibility (BoIA)'s goal is to teach our clients' Web Development teams what the WCAG 2.1 A/AA guidelines require and how to become self-sufficient in regards to making their sites compliant.

To help technical staff understand how the WCAG 2.1 A/AA guidelines and violations affect areas of this Website, we have organized the issues we identified into the following classifications:

Media: problems related to imagery, video and plug-ins.

Structure: problems related to HTML layout markup and positioning of data.


Text: problems related to actual textual content and it's comprehension.

Scripting: problems related to Scripting. e.g in JavaScript code.

CSS: problems related to Cascading Style Sheets & inline Styles.

Form: problems related to Form controls, navigability & comprehension.

Within each classification we provide specific details about each violation found, which URLs they were present on, code snippets, and screenshots where available. Remediation advice, pulled from BoIA's best practices, is offered and resource links are provided where appropriate for further explanation of the Guideline that failed.

 High priority issues are identified by a red triangle with a white exclamation point inside.

Scripting

Pages that include one of the listed scripts should be checked to make sure they're still usable without the script. All Webpage content should be accessible without the use of JavaScript. (even if it takes the user additional or alternative steps.)

- Each script should be checked to make sure it doesn't cause unexpected changes in context, and doesn't impose timing burdens on the user; such as automatic refreshing or changes of content. The user must have the ability to ignore, pause or somehow control such timed responses so they do not adversely affect the visitor reading experience.
- Scripting should not be a requirement to access essential Webpage content.