

Web Accessibility and Section 508 Compliance

An Evaluation of Current Software Tools*

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What is Web Accessibility?

Web Accessibility is the ability to fully and completely:

- Obtain content from the Web
- Interact with any Web site

Regardless of a user's:

- Bandwidth
- Disability
- Browsing technology.

What is Section 508?

Section 508 of the Rehabilitation Act of 1973 was enacted by the government on August 7, 1998.

Section 508 requires all Federal Agencies:

- To provide fully accessible Web sites
- To follow the 16 rules outlined in the chart to the right

Software tools that were tested:

- AnyBrowser.com
- A-Prompt, a collaboration between the Adaptive Technology Resource Centre (ATRC) at the University of Toronto and the Trace Center at the University of Wisconsin.
- CAST's Bobby
- Crunchy Technologies' PageScreamer
- HiSoftware's AccVerify and AccRepair
- Macromedia's Dreamweaver 508 Accessibility Suite
- SSB Technologies' InSight and InFocus
- UsableNet's LIFT
- WAVE, developed by Pennsylvania's Initiative on Assistive Technology (PIAT)

All the tools were tested on a Web site created to highlight the most important rules of Section 508 (the site violates 12 of the 16 rules).

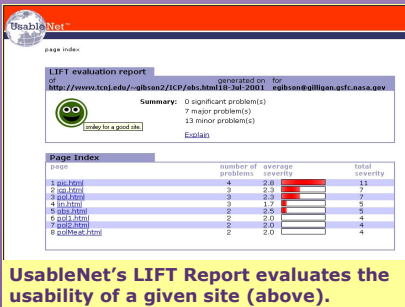
Evaluation & Repair Software Tools for Web Accessibility

Key:
VM = Verify Rule Manually
VP = Views Web page
C = Checks Web Page
F = Fix Error (with or without user intervention)
X = Feature Unavailable
? = No basis for evaluation

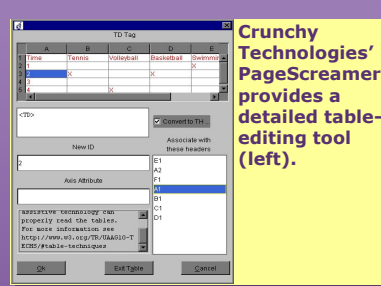
Legend:
▲ = Software Tool is Accessible
■ = Software Tool Evaluates
■ = Software Tool Repairs
■ = Full Version Requires Purchase

Shaded Rules: Web Accessibility Content Guidelines (WCAG) for Priority 1 Compliance not included in Section 508.

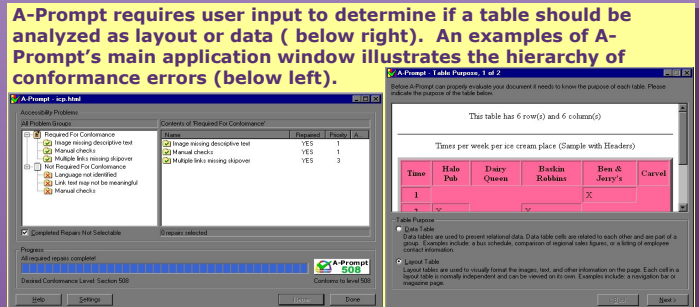
Section 508 Rule	AccRepair	A-Prompt	InFocus	PageScreamer	Bobby (Local)	Bobby (URL)	LIFT	WAVE
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content)	F	F	F	F	C	C	C	C
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation	VM	F	F	C	C	C	C	C
(c) Web pages shall be designed so that all information conveyed with color is also available without color	VM	VM	VP	VM	VM	VP	X	VM
(d) Documents shall be organized so they are readable without requiring an associated style sheet	VM	X	VP	C	VM	VP	X	VP
(e) Redundant text links shall be provided for each active region of a server-side image map	VM	?	VM	VM	?	?	?	C
(f) Client-side image maps shall be provided instead of server-side image maps where possible	C	F	F	F	C	C	C	C
(g) Row and column headers shall be identified for data tables	VM	F	F	F	VM	C	X	C
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers	VM	VM	C	F	VM	C	X	X
(i) Frames shall be titled with text that facilitates frame identification and navigation	F	F	F	F	C	C	X	C
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz	VM	VM	C	VM	C	X	?	VM
(k) A text-only page, with equivalent information or functionality and that is updated with the primary page, shall be provided to make a web site compliant when it cannot be accomplished in any other way	VM	VM	?	VM	VM	VM	?	X
(l) When pages utilize scripting languages for content or to create interface elements, functional text of the script shall be identified	F	F	F	VM	C	C	VM	C
(m) If an applet, plug-in or other application is required to interpret page content, there must be a link to a plug-in or applet that is compliant	C	?	F	C	C	C	X	C
(n) Forms shall be completely accessible	F	X	C	C	C	C	X	X
(o) A method shall be provided that permits users to skip repetitive navigation links	VM	F	?	VM	C	X	X	C
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required	VM	?	C	VM	?	?	?	X
(1.3) Provide an auditory description of the important information of the visual track of a multimedia presentation	VM	VM	?	X	C	?	X	?
(4.1) Clearly identify changes in the Natural Language of the document	VM	VM	?	X	C	VM	X	?
(6.2) Ensure that equivalents for dynamic content are updated when the dynamic content changes	VM	VM	?	X	?	?	X	?
(14.1) Use clearest & simplest language	VM	X	?	X	?	VM	X	?



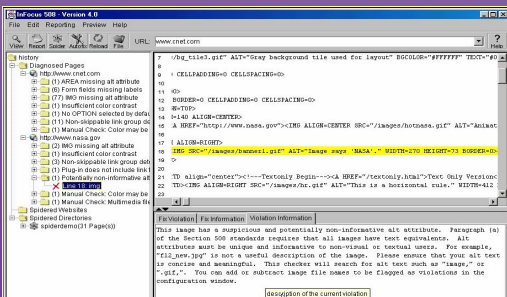
UsableNet's LIFT Report evaluates the usability of a given site (above).



Crunchy Technologies' PageScreamer provides a detailed table-editing tool (left).



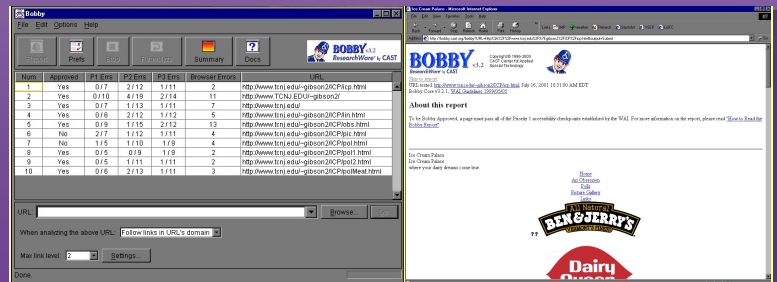
A-Prompt requires user input to determine if a table should be analyzed as layout or data (below right). An examples of A-Prompt's main application window illustrates the hierarchy of performance errors (below left).



SSB Technologies' InFocus highlights violations in the actual source code while providing detailed violation information (above).

* As of August 2001.

This research was conducted from June through August of 2001 at the NASA Goddard Space Flight Center. Although this work was commissioned by and conducted at NASA, any conclusions drawn are my own, and are not necessarily shared or endorsed by the agency.



CAST's Bobby tests a given page for accessibility. The Web-based version (above) displays the Web page and inserts question marks where potential violations occur. The application version (below), which is run on the user's local computer, is capable of evaluating many Web pages at once.