

Layers of Accessibility in Open Source Software

August 23, 2023

Presenters



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About Equinox



Equinox provides innovative open source software for libraries of all types.

Extraordinary service. Exceptional value.

As a 501(c)(3) nonprofit corporation, Equinox supports library automation by investing in open source software and providing technology services for libraries.



Open Source Products



Accessibility in open source library software



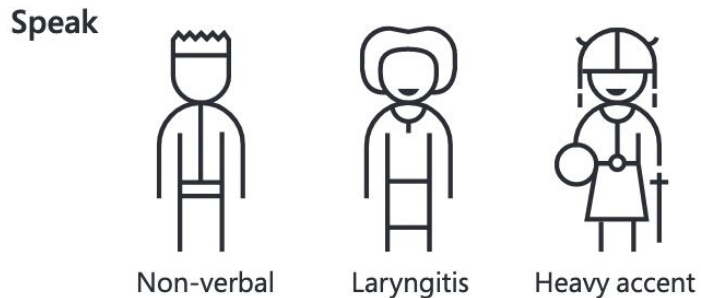
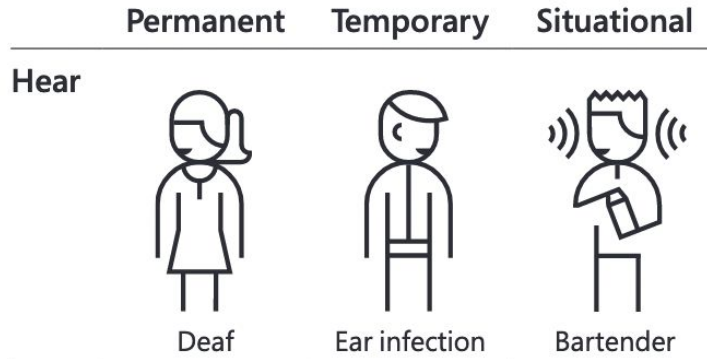
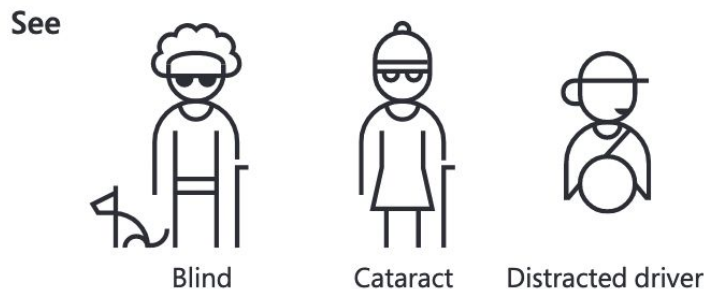
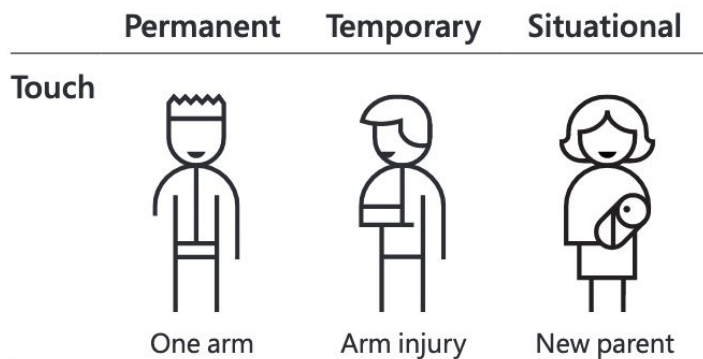
- Accessibility 101: software considerations for people with disabilities
- Standards and legal requirements
- Challenges for open source
- Work on VuFind

Accessibility is...



- Making web interfaces work with assistive technologies
- Avoiding design patterns that cause distress or confusion
- Ensuring that everyone can accomplish tasks despite physical or mental health challenges

Accessibility is...



Types of disabilities

- Vision
 - Blindness
 - Low vision
 - Color blindness
- Seizure disorders triggered by flashing lights
- Vestibular disorders triggered by animation
- Mobility
 - Paralysis
 - Tremors
 - Neuropathy
- Hearing
- Cognitive
 - ADHD
 - Autism
 - Dyslexia & dyscalculia
 - Memory & learning issues
 - Sensory processing

Top accessibility issues



- **Form fields:** labels with IDs; error messages linked via ARIA
- **Buttons:** onClick actions on <a>, <div> etc. do not include keyboard support; use <button>
- **Headings and structure:** landmarks allow skimming & skipping; tables have extra keyboard support
- **Tab order:** can you reach everything from the keyboard, in order? Can you see the focus outlines?
- **Unique link names:** “read more” what?
- **Alt text** for images

Cognitive accessibility (WCAG 3)



- **Attention:** your focus is not interrupted unexpectedly
- **Visual noise:** borders and high contrast elements kept to a minimum
- **Color:** emergency alert colors (red, orange, yellow) are not pervasive
- **Mobile support:** screen layout and inputs work with handheld devices
- **Memory:** layouts for similar functions are consistent across the site; forms support autocomplete for personal info

Accessibility Laws

Web Content Accessibility Guidelines (WCAG)



- **Perceivable** - Available through multiple senses
- **Operable** - Used with keyboard, mouse, voice control, or other input devices
- **Understandable** - Easy to comprehend
- **Robust** - Works across browsers, mobile devices, and assistive technologies

WCAG website: <https://www.w3.org/WAI/standards-guidelines/wcag/>

WebAIM quick reference: <https://webaim.org/resources/quickref/>

US accessibility laws



- Federal: several, including...
 - Section 508 (covers all software, not just web)
 - Americans with Disabilities Act
- State: patchwork of laws referencing 508
 - non-discrimination
 - software procurement
- BUT WAIT...

WAI US law reference: <https://www.w3.org/WAI/policies/united-states/>

- [August 2023: Proposed DOJ rule clarifying ADA & web accessibility](#)
 - Timeline depends on institution/constituency size:
 - More than 50,000 people: 2 years
 - Fewer than 50,000 people: 3 years
 - Excludes course content, archived pages
- [Criticisms](#): all-or-nothing approach, underestimates effort
- Still open for comments!

Canada accessibility laws



- Canada
 - Provinces have specific laws referencing WCAG
 - Accessibility for Ontarians with Disabilities Act (AODA)
 - Accessibility for Manitobans Act (AMA)
 - Nova Scotia Accessibility Act
 - Québec's Act to Secure Handicapped Persons... (WCAG translation)
 - Accessible British Columbia Act (Bill 6)
 - New(ish): [Accessible Canada Act](#)

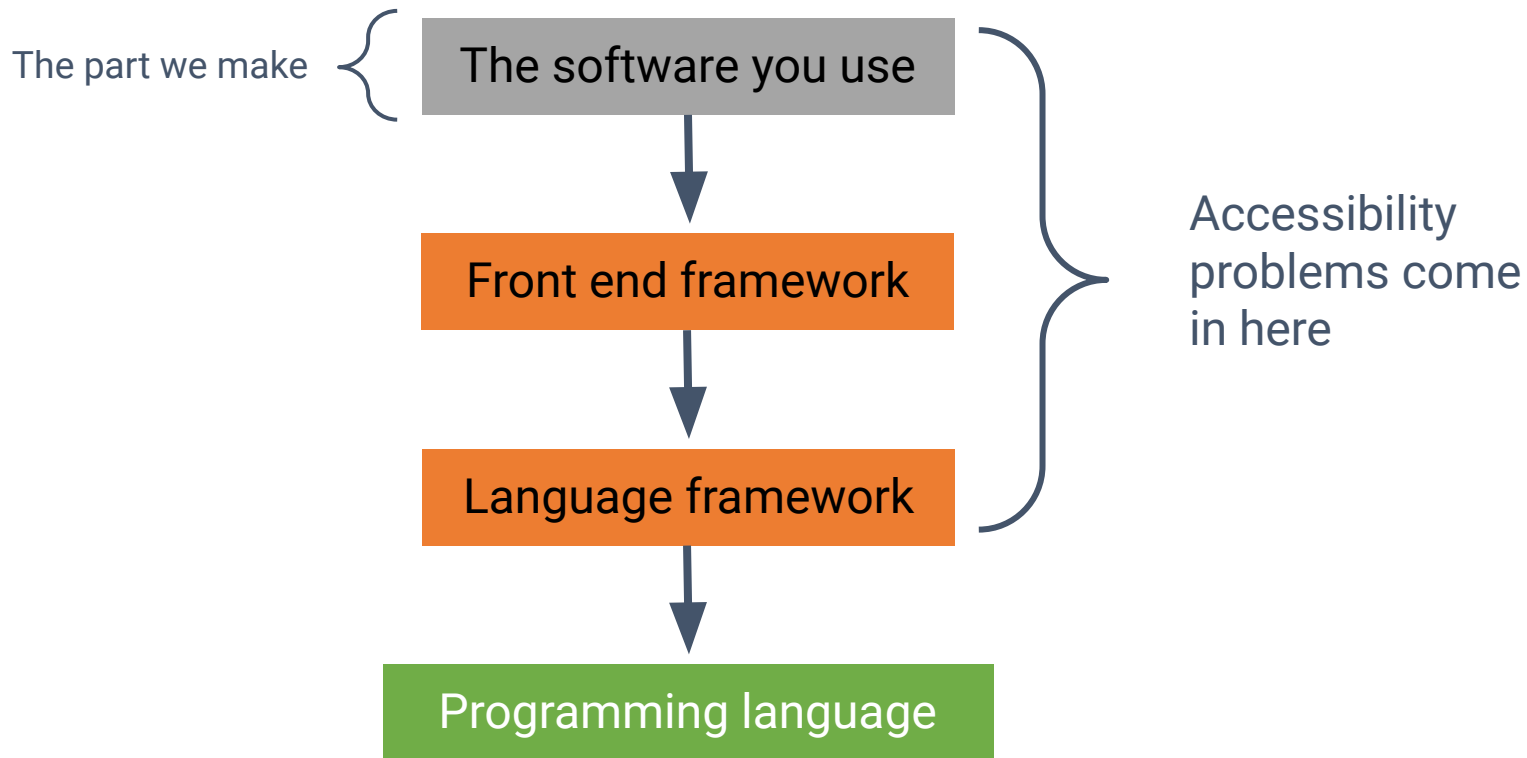
Accessibility laws worldwide



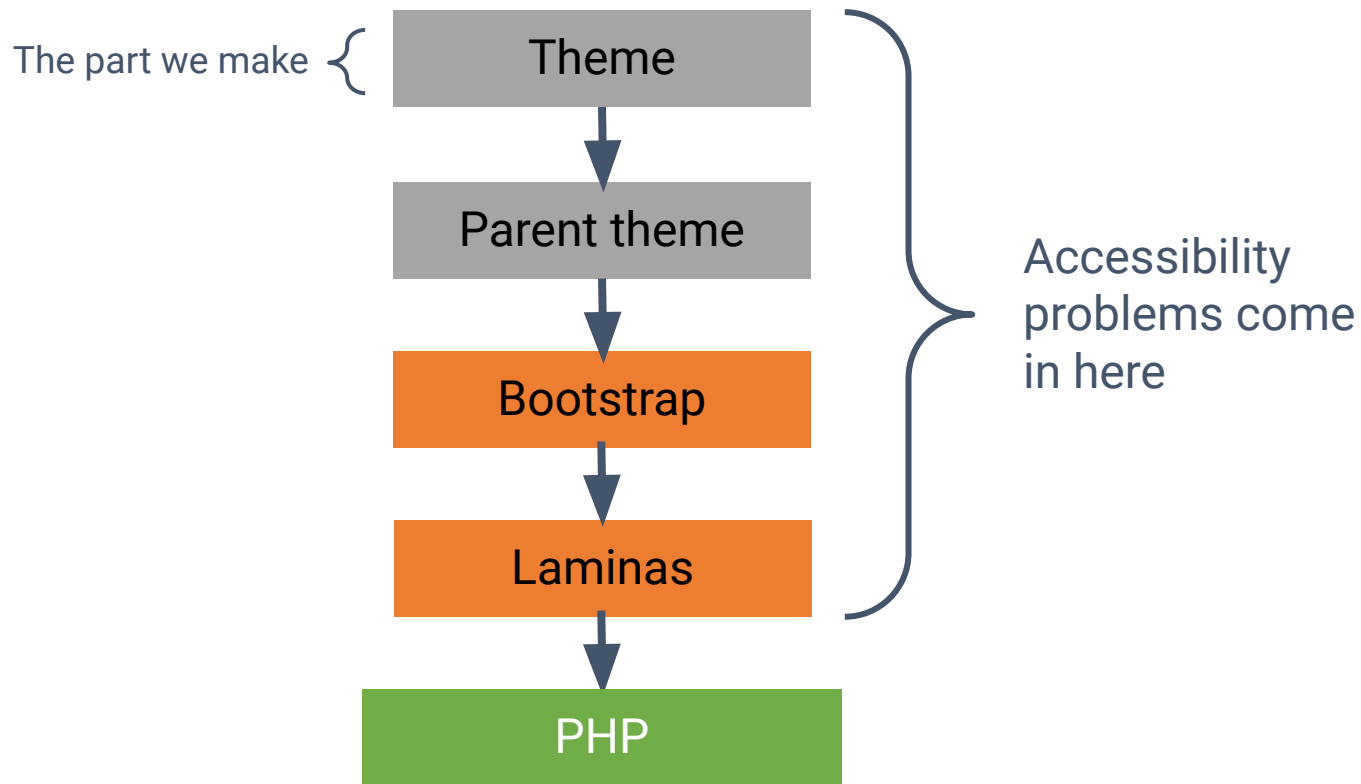
- EU: [European Accessibility Act](#)
- [Web accessibility laws & policies around the world](#)
- Don't stress: they're all WCAG

Accessibility in Open Source

Open source stacks



VuFind stack



Accessibility challenges in open source software



- Awareness
- Education
- Motivation
- Consequences

Designer and developer awareness & education



- Accessibility is a niche specialty in most degree programs
- Bad advice is everywhere
- Training materials omit accessibility considerations
 - “It’s too complicated and we don’t have time to cover that.”
 - “It doesn’t affect that many people, does it?”

Designer and developer motivation



- Open source volunteers aren't employees
- How to mandate training?
- Who sets the standards for the project?
- “If someone has a problem, they can file a bug.”
 - Do they know where in the stack to file it?
 - Is the bug system accessible?
- Are accessibility bugs prioritized by leadership?
 - “Treat accessibility issues as bugs, not feature requests.”

Lack of consequences for open source frameworks



- Accessibility laws don't apply to the projects, only the organizations using them
- Interface bugs are filed on the end products, not the underlying frameworks
- Who holds the framework developers accountable?

Accessibility in Bootstrap

Bootstrap issues

- Color contrast
- Mouse-only interactive toggles
- Form examples without labels
- Incorrect ARIA roles

“Home pages in the sample that utilize the popular Bootstrap framework had 9.6 more accessibility errors on average...”

– [WebAIM Million 2023 report](#)

Bootstrap text colors

Gray	4.3	
Blue	4.1	
Cyan	3.2	
Green	2.7	
Yellow	2.3	
Orange	2.9	
Red	3.6	
Purple	3.6	
Violet	3.9	

ICONS
3.0+
▲ 66%

TEXT
4.5+
✘ 0%

Gray	4.6	
Blue	4.5	
Cyan	4.5	
Green	4.6	
Yellow	4.6	
Orange	4.6	
Red	4.5	
Purple	4.6	
Violet	4.5	

TEXT
4.5+
✓ 100%

Bootstrap button colors

Default

Primary

Success

Info

Warning

Danger

Default

Primary

Success

Info

Warning

Danger

Bootstrap upgrade guide



[Bootstrap 3-4-5 Class Migration Reference](#)

Accessibility in VuFind Theme



All Fields ▾

Search

[Advanced](#)

Browse by Call Number ^

Browse by Language ^

Browse by Format ^

Find More ^

Topic: Concertos (Piano) ...



All Fields ▾

Search

[Advanced](#)

- Browse by Call Number ^
- Browse by Language ▾
- Browse by Format ^
- Find More ^

Topic: Concertos (Piano) ...

- Chinese
- Czech
- English
- French**
- German
- Indonesian
- Italian
- Japanese
- Korean
- Multiple
- No linguistic content
- Portuguese
- Spanish



Piano concertos nos. 2, 3 & 4



Piano concerto in C major, op. 39



Piano concertos 2 & 3



Piano concerto no. 2, op. 83, B flat major [83, B...](#)

VuFind theme work

- Headings
- Landmarks
- Form labels
- Lists
- Table structure
- Redundant adjacent links
- Ambiguous links
- Badge counts in links

Search Results - The winter of our discontent

Suggested Topics within your search.

American Culture 1

Conduct of life 1

Ethics 1

Search alternatives:

our » [pour](#) (Expand Search), [four](#) (Expand Search)

Showing 1 - 1 results of 1 for search 'The winter of our discontent',
query time: 0.05s

Sort Relevance ▾

Search Tools: [RSS Feed](#) - [Email Search](#) - [Save Search](#)

1



The winter of our discontent /

by Steinbeck, John, 1902-1968

Published 1961

Book

★ [Save to List](#)

Accessibility at Equinox Open Library Initiative

Community awareness & developer training



- [Developer's guide to accessibility](#)
- [ALA poster presentation, June 2023](#)
- [Upcoming training workshops](#)
- [Evergreen ILS accessibility bugfixes, January-June 2023](#)
- VuFind: bug fixes contributed to default theme; ongoing work
- Frameworks and code libraries: bug reports and pull requests
- ... and lots more education and training to come!

Questions?



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