

Discussion: Generated websites for Agda libraries

(including links to additional websites)

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Background

- ▶ agda/agdastdlib issue #2893: Generated websites
 - points raised, reactions so far
- ▶ Prototype of proposed generated website for the standard Agda library
- ▶ Potential enhancements for HTML
 - folding, tooltips, AST, ...
- ▶ Other Agda library and code websites
- ▶ Library websites for other proof assistants

agda/agda-stdlib issue #2893: Generated websites

- points

Current website

- ▶ <https://agda.github.io/agda-stdlib/>
- ▶ HTML generated by backend: agda --html index.agda
- ▶ A valuable resource for browsing modules in ordinary web browsers
- ▶ Browsing the library online directly in GitHub is quite impractical

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- points

Proposed website prototype

- ▶ <https://pdmosses.github.io/agda-stdlib/>
- ▶ Web pages generated from HTML generated by Agda

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Current website – deficiencies

- ▶ **Search:** global textual search **not supported**.
- ▶ **Module navigation:** a huge **flat list** of module names.
- ▶ **Current module name:** **may not be visible** after jumping to a declaration.
- ▶ **Scroll to top:** can be **tedious**.
- ▶ **Dark mode:** **no toggle** to switch to dark background / highlighting palette.
- ▶ **Version switching:** **no menu** for selecting different versions of the library.

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Proposed website prototype – benefits

- ▶ **Search:** all pages provide global textual search (but results not very useful).
- ▶ **Module navigation:** panel with expandable hierarchical navigation.
- ▶ **Current module name:** highlighted in the navigation panel.
- ▶ **Scroll to top:** a *Back to top* button appears at the top of the page.
- ▶ **Dark mode:** a toggle to switch to dark background / highlighting palette.
- ▶ **Version switching:** a menu for selecting different versions of the library.

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– responses

James McKinna

- suggest adopting as a drop-in replacement for our existing workflow
- in line with our existing approach: pages unadorned

Matthew Daggitt

- looks like a big improvement!
- open a PR which integrates this into the workflow for the current release process

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– PR

Aim: submit a PR by mid-December

All, ASAP, please:

- ▶ take a **critical look** at the prototype at <https://agda.github.io/agda-stdlib/>
- ▶ add any **comments and suggestions** for improvement to the issue

Potential enhancements for HTML

- as currently generated by the Agda backend

Current HTML

- ▶ highlighted, hyperlinked

Potential enhancements

- ▶ semantic tags (e.g., declarations, definitions)
- ▶ folding
- ▶ tooltips
- ▶ AST exploration

Other Agda library websites

Agda-Unimath

- ▶ <https://unimath.github.io/agda-unimath/>
- ▶ Uses literate Markdown sources, with explicit folding for imports

Type Topology

- ▶ <https://martinescardo.github.io/TypeTopology/>
- ▶ Uses literate Agda sources with plain text prose
- ▶ Web pages otherwise similar to current agda-stdlib pages

Other Agda code websites

Programming Language Foundations in Agda (PLFA)

- ▶ <https://plfa.github.io/>
- ▶ Uses literate Markdown sources, Makefile, cabal, shake

1Lab

- ▶ <https://1lab.dev/>
- ▶ Uses literate Markdown sources, rendered using Pandoc and various filters

Hyrax

- ▶ <https://hyrax.caberle.com/Hyrax/index.lagda>
- ▶ Uses literate Agda sources, rendered by [Obsidian](#)

Other Agda code websites

The Cardano Formal Ledger Specification

- ▶ <https://intersectmbo.github.io/formal-ledger-specifications/site/>
- ▶ Uses literate Markdown sources, rendered by MkDocs
- ▶ index similar to current agda-stdlib index

Ouroboros Leios formal specification

- ▶ <https://leios.cardano-scaling.org/formal-spec/>
- ▶ Mixes literate Agda and literate Markdown sources, adds flat nav panel

Library websites for other proof assistants

Rocq

- ▶ <https://rocq-prover.org/doc/V9.1.0/stdlib/>

Lean

- ▶ https://leanprover-community.github.io/mathlib4_docs/