AMuseWiki

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AmuseWiki: a library oriented wiki engine (talk)
September 3, 2015, Granada

amusewiki.org

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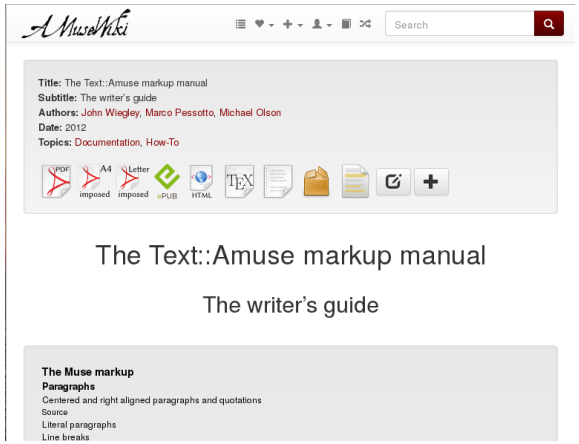
How does it look like?



Scenario

- Digital library with more than 2000 texts, including full-length books
- Long term archiving (not fire and forget texts), control revision
- Quality output required (read: LaTeX output)
- Imposing of PDF for home-printing
- EPUB output for mobile devices
- Preference for a flat file storage (like ikiwiki or MoinMoin)
- Creation of collections (like on mediawiki)
- One-man project

The lightweight markup

- No standard, even if Markdown seems to be the winner (but with dialects)

- Emacs Muse: project kind of dead, but the markup is compact and expressive, documented, and has a reference implementation. `https://www.gnu.org/software/emacs-muse/`
- Some incompatibilities have been introduced, but they are documented (to address corner cases where the syntax can be confusing).
- Bottom line: all these markups are easy to use and it takes 5 minutes to learn one of them, as long as it is documented.

Our own dialect of Emacs Muse

- Manual: `http://www.amusewiki.org/library/manual`
- Module: `Text::Amuse` (produces LaTeX and HTML)
- Ill-suited for technical papers, though. No math support, no syntax highlight, but well-suited for general prose and even poetry.
- It has every feature one could expect from a lightweight markup: images, sectioning, footnotes, simple tables, bold, italics, subscript, superscript, lists, verbatim, quotations.
- So far proved itself good and expressive.

Importing

- Legacy library had the texts in filtered HTML
- People usually have the texts in Word format or copy and paste from HTML pages
- The javascript HTML editor `CKEditor` has a "paste from Word" feature `http://ckeditor.com/`
- Need to convert the HTML to Muse, preserving as much as possible the logical structure of the document (and discarding the noise).
- Need some common search-and-replace patterns (like typographical quotes, text cleaning).
- `Text::Amuse::Preprocessor`

The future

- Slides (upcoming release)
- A better installer
- Teasers
- Decorative images

Compiling

- Templating for output: `Template::Tiny`
- PDF generation: `XeTeX` or `LuaTeX` (Unicode aware, system fonts)
- `EBook::EPUB::Lite` (this is a port of `EBook::EPUB` withou XS dependencies) using `Text::Amuse`'s splat HTML output
- `PDF::Imposition` (written for this project but it's a general purpose module): put logical pages into a physical page according to a schema (for booklets and home printing)
- All the above glued together by `Text::Amuse::Compile`
- `muse-compile.pl` script is shipped with `Text::Amuse::Compile`, so you can generate the formats from the command line.

Data storage

- Texts themselves are self-contained. All the information describing the text (like author, title, categories) is stored in the header of the text. 1 text (even a whole book), 1 file.
- Texts are stored in a Git archive
- Git integration on the site with `cgit`: `http://www.amusewiki.org/git/amw/`
- Full text search: Xapian (light, fast, fairly simple to setup, well integrated in Perl with `Search::Xapian`).
- Database integration: `DBIx::Class`

Web backend

- A daemon takes care of all the operations which are slow or somehow delicate where concurrent access could be a problem (text compilation, publication, indexing, Git interaction).

- Formats are pregenerated, including the HTML. The frontend just serves them.
- The backend and the frontend communicate via a job queue in the database.
- Some message queue systems were examined, but resorted to use the database because it was the most straightforward and other solutions looked like over-engineering.

Web Frontend

- Catalyst application: chaining, method-to-uri mapping, actively developed, great community, back-compatibility approach.
- Plack-able application (currently deployed via nginx + FCGI)
- Template: Template Toolkit
- Localization via `Catalyst::Plugin::I18N` (plus local overriding via local JSON file).
- Localized for English, Italian, Croatian, Macedonian, Russian, Finnish, Swedish, German, Spanish.
- Multisite: on one instance you can run as many sites as you want (this was the most compelling argument to write AmuseWiki).

User management

- Kept at minimum reusing existing solutions.
  - `Catalyst::Plugin::Authentication`
  - `Catalyst::Plugin::Authorization::Roles`
  - `DBIx::Class::PassphraseColumn`
- No hierarchical structure: each librarian can create other peer librarians (plus root for site management) with the same level of privileges.
- Modes:

  - private site
  - blog site (only logged-in can edit)
  - moderated wiki (approval required)
  - open wiki (undertested)

The Bookbuilder

The basic idea is like the Wikimedia's book creator, but with goodies. Features:

- LaTeX output
- Font selection
- Paper size selection
- Imposition schema selection
- Cover images upload
- Custom files are compiled by the backend, even if the users sees the live logs and the process is pretty fast.
- EPUB output if required, with embedded fonts.
- A basic question to keep robots away (probably will not scale, but so far works well)

Some time left?

If we have some more time and no questions…

The past

- Drupal + filtered HTML, texts kept in sync on a local Git repo with scripts. Obviously it wasn't a brilliant idea, to be generous.
- Same filtered HTML inherited from Drupal, plus home-brewed CGI scripts. It kind of worked.
- Dancer application and Emacs Muse markup, no database. Worked, but didn't scale with multisite.