

FDML Core — Progress Report (to 28 Oct 2025)

Shivsaranish Thakur

28 Oct 2025

1 Executive Summary

Over the last sprint we delivered a complete, demonstrable pipeline for the FDML project:

- **Core:** Stable XSD schema + Schematron rules; sample corpus (12 valid, 7 invalid) with deterministic validation.
- **CLI:** Shaded JAR (`fdml-core.jar`) exposing `validate`, `validate-sch`, `validate-all`, `render`, `export-pdf`, `index`, `lint`, `init`, `doctor`.
- **Site:** Styled card renderer (XSLT), robust builder (`build_index.sh`), cache-busted CSS, working navigation, and a **professional Search** page powered by `site/index.json`.
- **Release:** Tagged **v0.3.4**, updated Homebrew tap, verified local brew install of `fdml` 0.3.4.
- **Dev Flow:** Deterministic make targets (`html`, `serve`, `report`), CI workflows (`validate`, `render`, `pages`, `release`).

2 Scope vs Plan

Planned	Status / Evidence
Schema (XSD) + Schematron	Done. XSD in <code>schema/fdml.xsd</code> ; compiled Schematron <code>schematron/fdml-compiled.xsl</code> .
Sample Corpus	Done. 12 valid + 7 invalid; all valid pass, all invalid fail deterministically.
CLI packaging	Done. Shaded JAR; commands listed; wrapper <code>bin/fdml</code> .
Website (cards)	Done. XSLT card renderer, cache-busted CSS; cards now fully styled even on <code>file://</code> .
Search page	Done. New grid UI; links fixed (<code>*.fdml.xml</code> → <code>*.fdml.html</code>); count shows 12/12.
Release + Tap	Done. Tag v0.3.4 , SHA256 computed, tap formula updated and reinstall verified.
CI	Active. <code>fdml-validate</code> , <code>render-test</code> , <code>cards-pages</code> , <code>release</code> .

3 Technical Delivery

3.1 Schema & Validation

- XSD enforces IDs (`f-*`, `s-*`), meter/tempo types, and figure structure.
- Schematron augments business rules: nonempty `meta/title`, unique figure IDs, positive beats, references valid figure IDs in sequences.
- **Doctor** combines XSD + Schematron + Lint for a single strict gate.

3.2 CLI

- Packaging via Maven Shade; main class `org.fdml.cli.Main`.
- Commands: `validate`, `validate-sch`, `validate-all`, `render`, `export-pdf`, `index`, `lint`, `init`, `doctor`.
- `index` assembles `site/index.json` for Search; `lint` warns on off-meter figures; `init` scaffolds a minimal FDML file.

3.3 Website & Search

- Card renderer (XSLT) now links `./style.css?${cssVersion}` and ships `site/cards/style.css` to support `file://` and HTTP.
- Navigation fixed: `brand`, **Examples**, **Search**, and back link target `../index.html` or `../search.html` from cards.
- **Search** redesigned as a grid, with live filtering and accurate link mapping (`*.fdml.xml` → `*.fdml.html`); uses `site/index.json`.

3.4 Builder & Make targets

- `scripts/build_index.sh`: safe cache-buster `V=${1:-${V:-$EPOCHSECONDS}}`, never nuked `site/`, ships CSS, emits `index.json`, threads `@@CSSV@@` into `search.html`.
- `make html`: runs XSLT, then builder; `make serve`: `python3 -m http.server` on `site/`.
- `site/` ignored in Git for clean diffs; CI publishes pages.

3.5 Release & Packaging

- Tag: **v0.3.4**. Artifact: `fdml-core.jar`.
- SHA256 (release): `477c6d08f41798228abb6e1414d83e4e7d67392b5319ccd7371a1fe558932ff8`.
- Tap repo updated; local reinstall verified: `fdml 0.3.4` running on OpenJDK 17.

4 Repository & Environment

- **Repo**: `~/Projects/fdml-core` (main branch).
- **Toolchain**: OpenJDK 17.0.16; Maven 3.9.11; Node 20.18.0; libxslt 1.1.35; latexmk 4.83; macOS 14.3.

5 Key Commits / Evidence (subset)

- `v0.3.4` tag (release).
- `cd6faea` cards: fix nav/back links; add Search link.
- `ca25c65` search: grid UI; correct link mapping; builder hardened.
- `a2f3cc1` builder emits `index.json`; Search 12/12 fixed.
- `bf43a09` homepage nav shows **Search**.
- `d08e131` cards: explicit cache-busted CSS href.

6 Testing & QA

- **XSD/Schematron:** valid corpus passes; invalid corpus fails deterministically (see CI job `fdml-validate`).
- **Unit/Snapshot:** renderer snapshot, `IndexJsonTest` verifies `index.json` covers all valid files and has ≥ 12 items.
- **Manual:** local `make serve` on `site/` to confirm cards, nav, and Search.

7 Risks & Mitigations

- *Browser file security:* `file://` blocked fetch; mitigated by `make serve` and builder shipping correct assets.
- *Cache busting:* risk of stale CSS; mitigated via `V` parameter threaded through cards and Search.
- *Tap drift:* nested repo divergence; mitigated with a one-shot release script `scripts/release.sh`.

8 Next 2 Weeks (Plan)

1. **Corpus:** expand to ≥ 30 validated dances; add richer sequences and formations; add more invalid cases.
2. **Validation:** strengthen Schematron messages (figure totals by meter; section coverage; duplicate steps).
3. **Export:** finalize PDF export styling (page breaks, typography); ensure CI uploads PDF artifacts.
4. **Docs:** author *Authoring FDML*, *Validator usage*, *Renderer/Export tutorial*; publish on site.
5. **CI Quality Gates:** add `scripts/ci_verify.sh` assertions for Search link presence and card CSS href on multiple samples.

9 How to Reproduce Locally

```
# Build CLI
mvn -q -DskipTests package

# Validate corpus
bin/fdml validate corpus/valid
bin/fdml validate-sch corpus/valid

# Build site and serve
make clean html
make serve
# open http://localhost:8000/index.html
```