

x_make_markdown_x “ Documentation Furnace

This generator keeps the lab’s written evidence as precise as the chemistry. Markdown catalogs, PDF exports, accessibility linting—every document comes out of this furnace with the same mechanical accuracy.

Mission Log

- Produce Markdown dossiers and registries through scriptable templates.
- Funnel PDFs through `x_make_common_x.export_markdown_to_pdf` so every artifact carries `ExportResult` metadata and deterministic paths.
- Validate accessibility and linting so the prose meets the same standard as the codebase.
- Feed orchestrator summaries and Change Control decks with reproducible documents, never ad hoc text.

Instrumentation

- Python 3.11 or newer.
- Ruff, Black, MyPy, Pyright, pytest when you intend to run QA.
- wkhtmltopdf or Pandoc installed depending on which exporter adapter you enable.

Operating Procedure

1. `python -m venv .venv`
2. `\\.venv\\Scripts\\Activate.ps1`
3. `python -m pip install --upgrade pip`
4. `pip install -r requirements.txt`
5. `python x_cls_make_markdown_x.py --help`

Use the CLI to enumerate recipes, generate Markdown payloads, and produce PDFs that the orchestrator catalogs automatically.

Evidence Checks

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|-----------------|-----|-----|---|--|--|
| Check Command | --- | --- | Formatting sweep <code>python -m black .</code> | Lint interrogation <code>python -m ruff check .</code> | Type audit <code>python -m mypy .</code> |
| | | | Static contract scan <code>python -m pyright</code> | Functional verification <code>pytest</code> | |

Reconstitution Drill

On the monthly rebuild I install wkhtmltopdf on a fresh machine, run this furnace, and verify Markdown and PDF artefacts align with orchestrator summaries. Binary versions and runtimes are logged; any drift feeds back into Change Control before the next release window.

Conduct Code

Document every new template, exporter, or lint rule in Change Control. Run the QA slate before touching production. Words are evidence; treat them with the same rigor as lab results.

Sole Architect's Note

I forged every generator, exporter hook, and lint circuit in this project. My experience as both automation engineer and documentation lead keeps narrative strategy synchronized with tooling.

Legacy Staffing Estimate

- Without LLM assistance you would field: 1 documentation lead, 1 automation engineer, 1 build specialist for PDF tooling, and 1 technical editor.
- Delivery horizon: 10–12 engineer-weeks to reach parity.
- Cost band: USD 80k–105k plus ongoing exporter maintenance.

Technical Footprint

- Language: Python 3.11+, templating strategies, filesystem orchestration.
- Export Infrastructure: shared exporters from `x_make_common_x`, wkhtmltopdf, optional Pandoc adapters.
- Tooling Discipline: Ruff, Black, MyPy, Pyright, pytest, Markdown lint rigs.
- Integration Points: orchestrator hooks, diagram ingestion from Graphviz/Mermaid siblings, Change Control evidence capture.

