



TLF_PACKAGER: Automated TFL Packaging and Bookmarking for RTF and PDF Outputs with User-Driven Excel Review and Approval Using Python

OVERVIEW

The TLF_PACKAGER is a robust Python-based automation tool designed to streamline the packaging of clinical Tables, Listings, and Figures (TLFs). The tool automates file detection, title extraction, and bookmarking for RTF, DOCX, and PDF outputs, while enabling a user-driven Excel-based review and approval workflow. This approach minimizes manual intervention, improves efficiency, and ensures consistent, standardized, and regulatory-compliant deliverables across studies.

EXECUTION MODE

- ❖ **Command-Line Interface (CLI):** Direct Python execution.
- ❖ **Batch Mode:** BAT file-driven execution with user-friendly parameter prompts.
- ❖ **SAS Macro Integration:** Invoked directly from SAS workflows

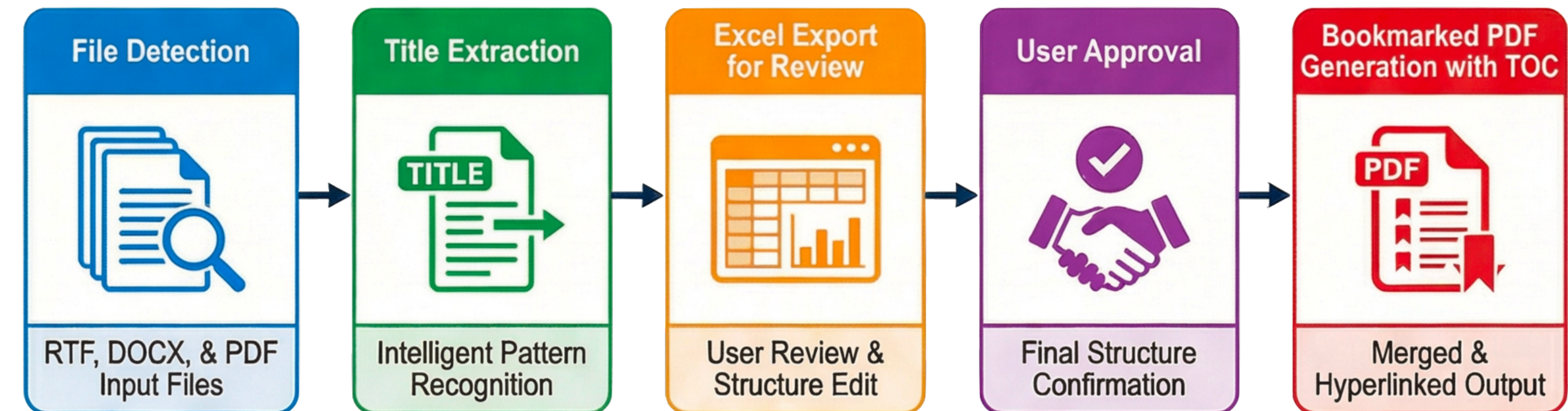
BENEFITS

- ★ **Reduced Manual Effort:** Automates TLF packaging and bookmarking, minimizing repetitive manual steps.
- ★ **Improved Consistency:** Ensures standardized titles, bookmarks, and navigation across outputs.
- ★ **Faster Turnaround:** Accelerates final deliverables, especially during late-stage updates.
- ★ **Audit-Ready Traceability:** Maintains an Excel-based approval trail, supporting inspection readiness and compliance expectations.

KEY FEATURES

- ◆ Automated title extraction across multiple output formats and Excel-based user review and approval workflow
- ◆ Seamless Microsoft Word integration for RTF and DOCX handling
- ◆ Generation of a single bookmarked PDF output
- ◆ Optional clickable Table of Contents (TOC) for easy navigation
- ◆ Intelligent detection and classification of Tables, Listings, and Figures (TLF)

WORKFLOW DIAGRAM



TECHNICAL SPECIFICATIONS

- ✓ **Programming Language:** Python 3.x
- ✓ **Core Libraries:** PyMuPDF, openpyxl, python-docx, pywin32
- ✓ **Supported formats:** RTF, DOCX & PDF
- ✓ **System Requirements:** Microsoft Word installed (required for RTF/DOCX → PDF conversion)

Scan to dive in to the full GITHUB repository

