

Yutex Tech Stack

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Frontend

- **SvelteKit** Modern UI framework for reactive, fast frontend.
- **Adapter-Static** Compiles SvelteKit into static files (`/build`) so Tauri can ship them.
- **Vite (bundler)** Powers dev server and build pipeline.
- **(Optional) TailwindCSS** For styling (if added later).

Desktop Shell

- **Tauri** Wrapper that turns your web frontend into a native desktop app. Uses the system's webview (instead of bundling Chromium like Electron) → lightweight. Bridges frontend ↔ Rust backend.

Backend

- **Rust (via Tauri commands)** Handles system-level logic such as file access and LaTeX compilation. Rust is secure, fast, and integrates tightly with Tauri.

LaTeX Engine

- **Tectonic (Rust-based)** Modern LaTeX engine that downloads required packages automatically. Replaces MiKTeX/TeX Live (avoids bloated dependencies). Invoked by the Rust backend to compile `.tex` into `.pdf`.

Editor

- **CodeMirror or Monaco Editor** (inside SvelteKit UI) Provides rich text/code editing with LaTeX syntax highlighting. Similar to what Overleaf uses.

Summary Flow

1. User writes LaTeX in Monaco/CodeMirror editor (SvelteKit UI).
2. Click `Compile` → Frontend calls a Rust Tauri command.
3. Rust command runs Tectonic → produces PDF.
4. PDF is shown back in the app (via PDF viewer component or download).

Final Stack in One Line

SvelteKit (Adapter-Static + Vite) + Tauri + Rust + Tectonic + Monaco/CodeMirror