

Introduction to UI Design Tools Open Source

- Open source means public code: inspect, modify, redistribute, self-host
- Licensed MPL-2.0, MIT, Apache-2.0 — not just "free to use"
- Why teams switch: subscription fatigue, data ownership, vendor independence
- Course covers the 2026 landscape, workflows, and migration paths
- Penpot is our primary reference tool throughout
- Goal: practical decision-making, not expertise in every niche tool



What Makes a Design Tool Truly Open Source



Is the tool
open source?

YES

Open Source
(Path)



Open licenses that
permit commercial use

GPL, MIT, MPL, Apache,
BSD permit commercial use;
redistribution rules differ

NO

Free-to-Use but
Proprietary (Path)



Free to use,
but not open source

Lunacy is free
but proprietary



- Open source means public, inspectable, modifiable, self-hostable code



- Free-to-use is not open source: Lunacy is free but proprietary



- Penpot is MPL-2.0; full codebase publicly inspectable on GitHub



- GPL, MIT, MPL, Apache, BSD permit commercial use; redistribution rules differ



- Open stack: Inkscape, GIMP, Excalidraw, Penpot

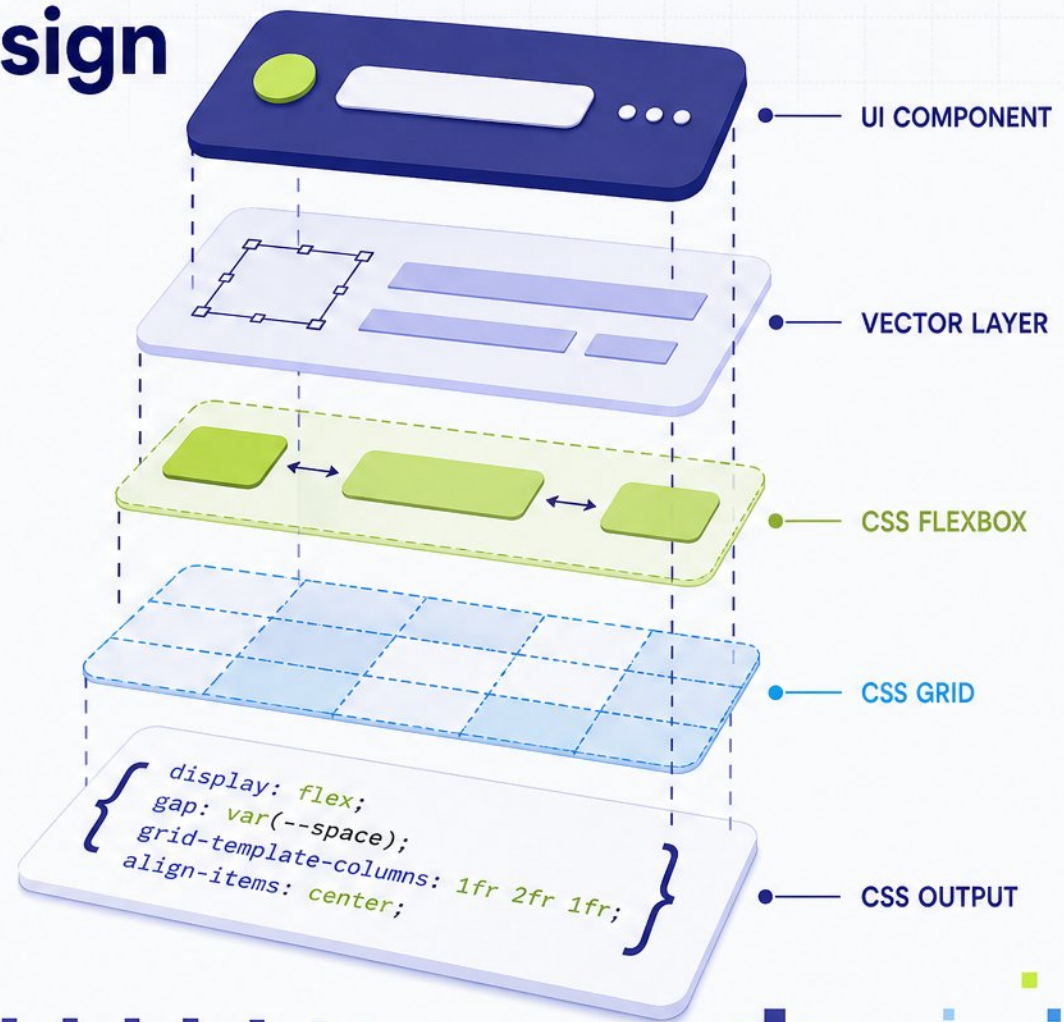
The 2026 Landscape of Open Source UI Tools

- **Penpot:** most mature open-source Figma alternative, with native design tokens
- **Lunacy:** free but proprietary; strong for Windows and offline workflows
- **OpenPencil:** offline-first, reads .fig files, brings your own AI key
- **Quant-UX:** prototyping plus built-in user testing and heatmaps
- **Plasmic:** visual builder that outputs production-ready React code
- **Honest gaps:** plugin ecosystems, large-file performance, advanced prototyping

	Penpot	Lunacy	OpenPencil	Quant-UX	Plasmic
 Design & UI Creation					
 Design Tokens					
 Offline Workflows					
 Prototyping					
 User Testing & Heatmaps					
 Production-Ready Code Output					

Core Capabilities in Open Source UI Design

- Vector editing, auto-layout, components, and prototyping across Penpot, Lunacy, OpenPencil, Quant-UX
- Penpot's CSS-native approach: flexbox and CSS Grid map directly to browser behavior
- Dev inspection is free in Penpot—CSS and SVG access without a paid seat
- Figma still leads on plugin depth, prototyping, and large-file performance
- Penpot leads on native W3C design tokens and zero-cost developer handoff



Workflows for UI Prototyping and Developer Handoff



- Reusable components: main components, instances, nested components, and layout components



- Overrides, swapping, and detaching keep instances flexible without breaking the link



- Prototype with clickable flows, link triggers, and basic animations; play to preview



- Developer-ready files: boards, CSS Flex/Grid, meaningful names, component annotations



- Handoff becomes shared: inspect CSS, copy SVG, export assets with no extra license



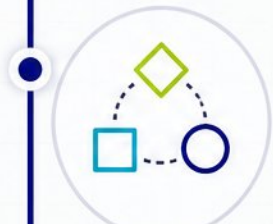
Collaboration and Version Control



- Real-time co-editing in Penpot cloud and self-hosted: comments, team libraries.



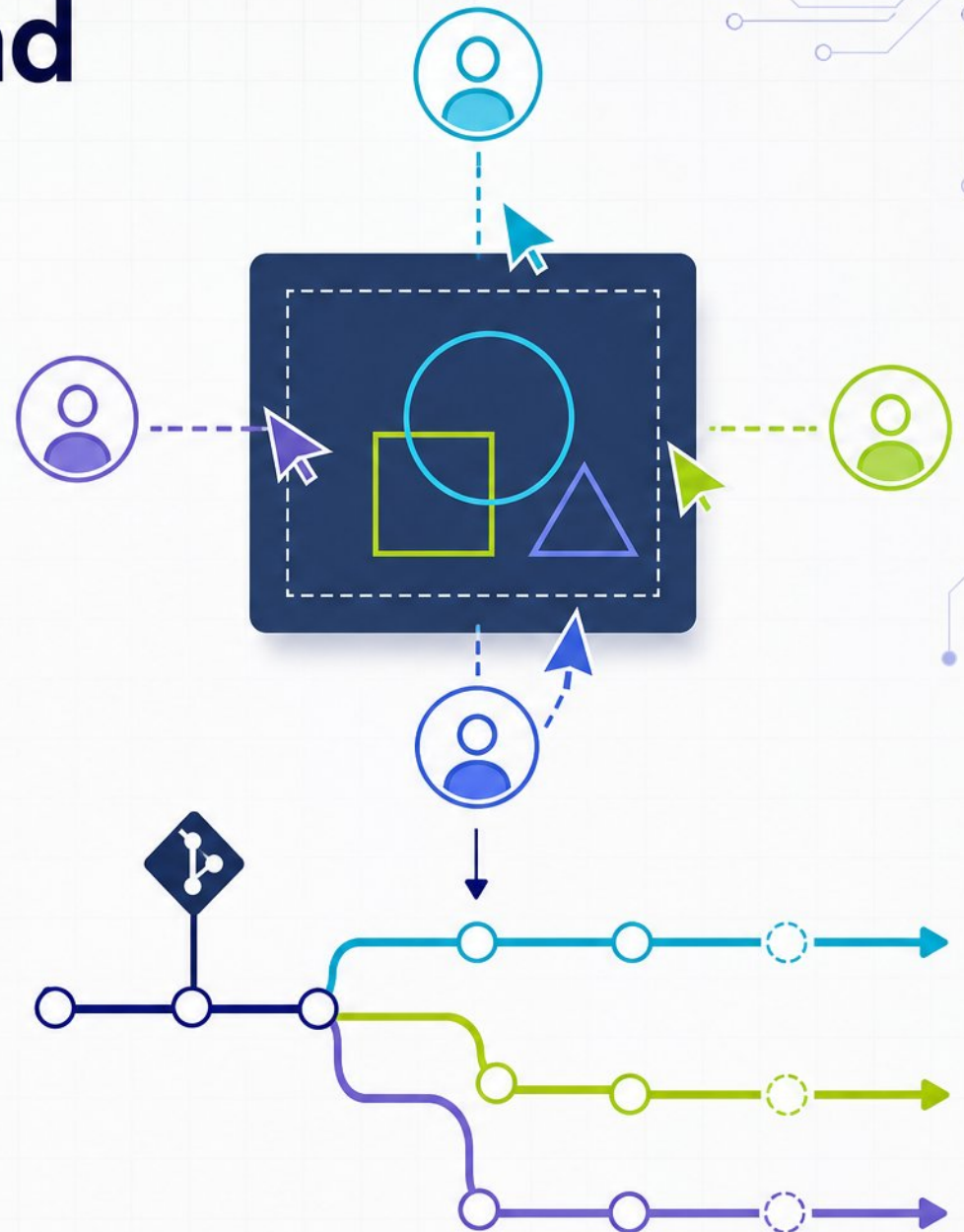
- Penpot files are ZIP archives with readable JSON and SVG—commit designs to Git.



- Contrast models: Figma multiplayer, Lunacy offline files, OpenPencil P2P WebRTC.



- CoDesign versioning, Penpot MCP server, and REST API enable scripted automation.



Building a Design System with Tokens and Libraries



- Native W3C design tokens cover color, spacing, sizing, radius, opacity, rotation, stroke width



- Token names use dotted hierarchies, e.g. blue.100 or primary.button.background



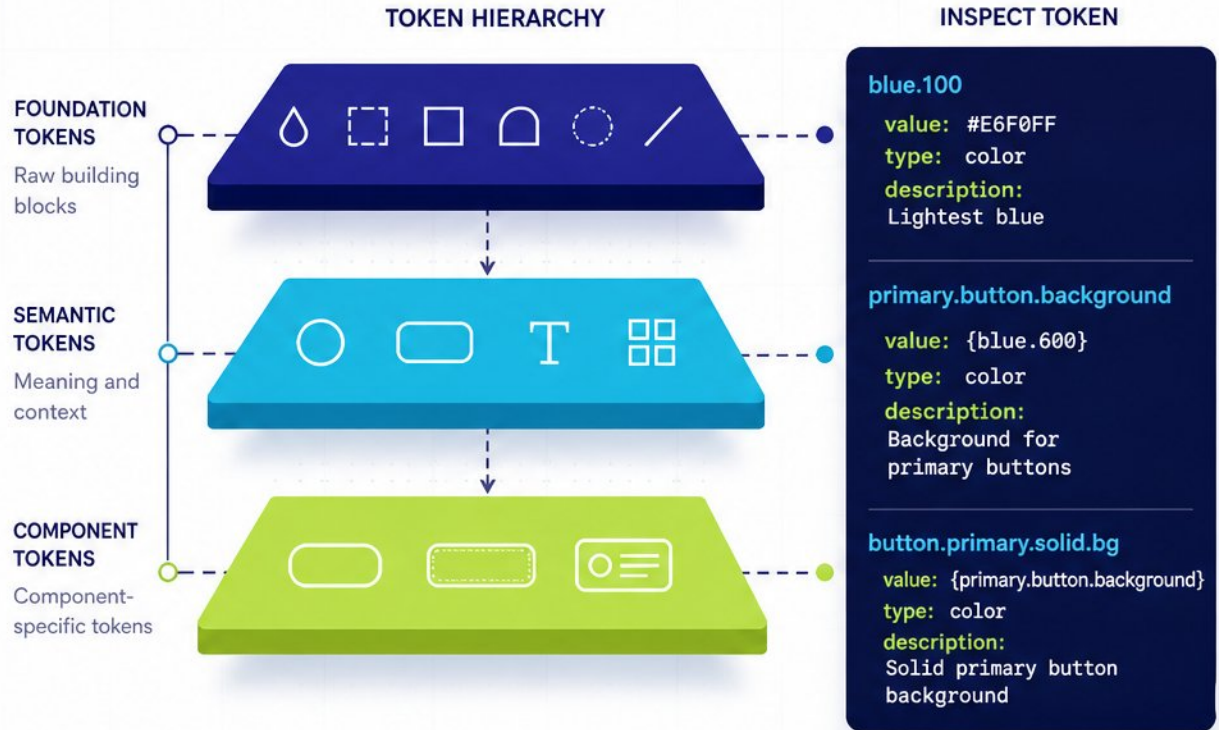
- Structure in layers: foundation, semantic, and component tokens for scalable systems



- Librarise make assets reusable: local, connected, and shared/published across teams



- Document with boards, cover thumbnails, annotations, and consistent naming conventions



Self-Hosting and Data Ownership

- ▶ Docker Compose: fastest path for small teams
- ▶ Kubernetes, Rancher, OpenShift, or Elestio for larger or air-gapped setups
- ▶ Small team baseline: 1-2 CPUs, 4 GiB RAM, 50-100 GB database
- ▶ Production essentials: HTTPS, reverse proxy, WebSocket path, S3 storage, SMTP, OIDC/LDAP
- ▶ Trade-off: no per-seat fees but DevOps skills required; Penpot Cloud is zero-cost



Extending Open Source Design Tools



- PenpotHub hosts content tools, icon sets, color utilities, and token managers



- Locofy Lightning converts Penpot designs into React, HTML/CSS, Angular, and Vue code



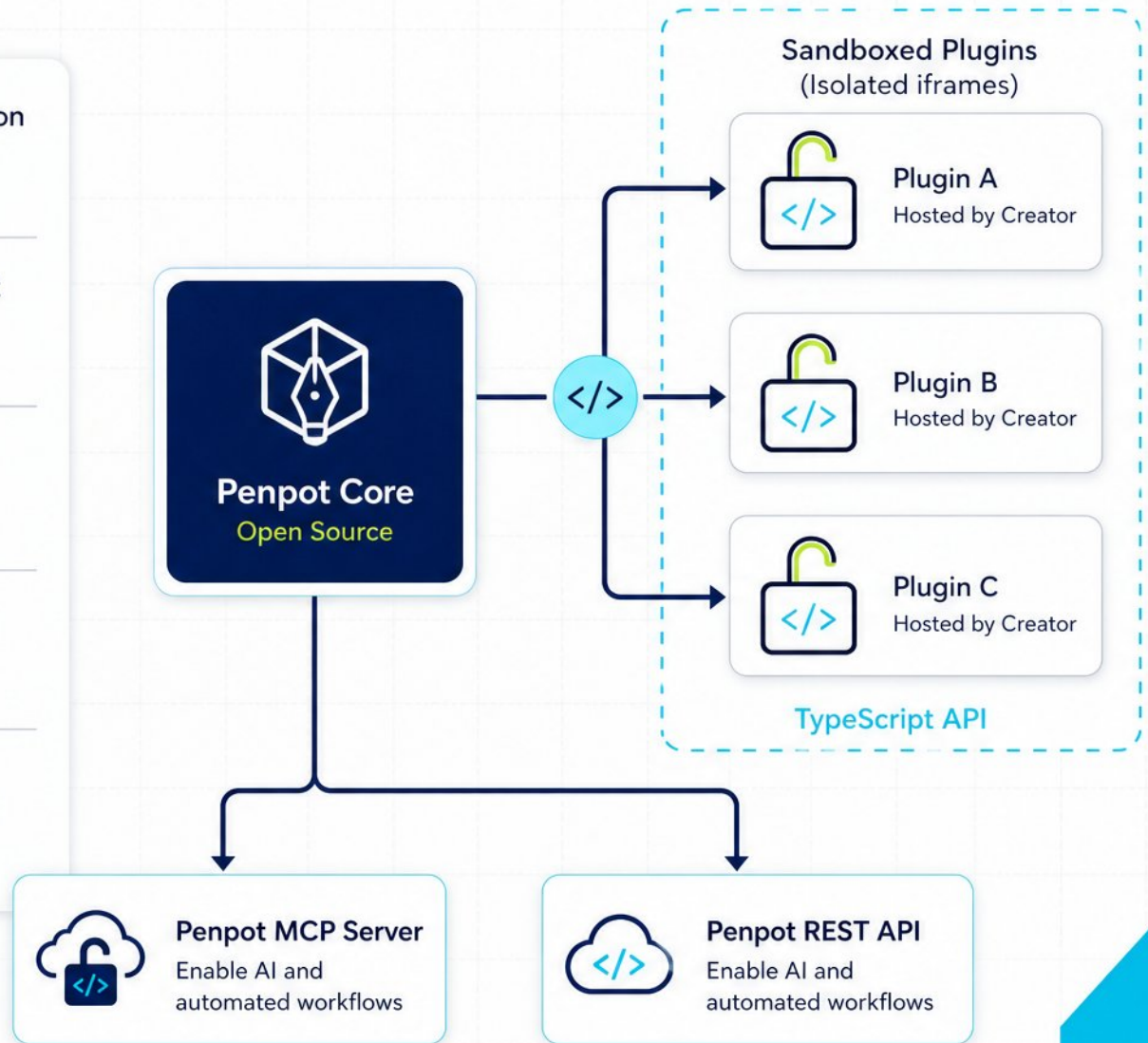
- Plugins run in isolated iframes, hosted by creators, using a TypeScript API



- The Penpot MCP server and REST API enable AI and automated workflows



- Plugin catalog is smaller than Figma's, with some unmaintained plugins and doc gaps



Evaluating Open Source UI Tools



- ▶ **Project health:** GitHub stars, recent releases, issue responsiveness, roadmap transparency



- ▶ **Feature maturity:** Penpot leads on native design tokens and standards-based output

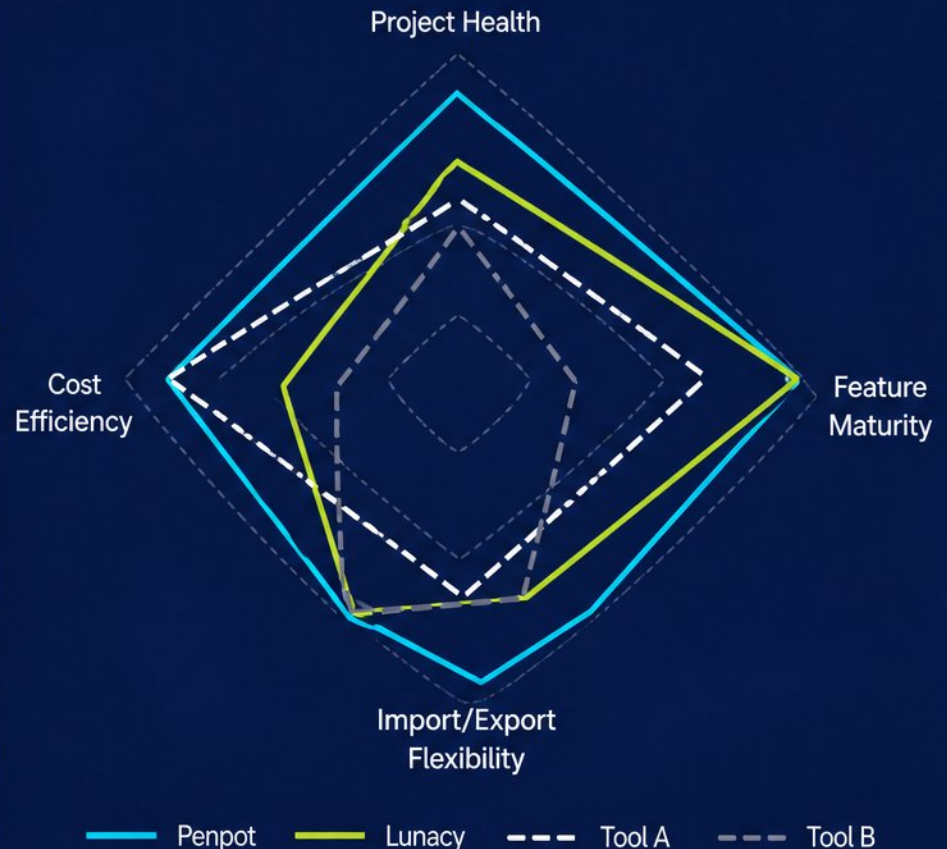


- ▶ **Import/export:** Penpot reads Figma and Sketch with known limitations; Lunacy reads Sketch natively



- ▶ **Cost:** Penpot self-hosted or free cloud removes per-seat fees; Lunacy free with paid asset extras

Feature Depth Comparison



Migrating from Proprietary Tools to Penpot

- - Export Figma files with the Figma-to-Penpot plugin
- - Validate fidelity in low-stakes sandbox files first
- - Expect limits: color variables, slow complex files, manual vector fixes
- - Run parallel ecosystems; avoid destructive continuous syncs; use API bridges
- - Gains: cost savings, data ownership, CSS-native handoff



Case Studies and Team Experiences



- Figma-to-Penpot switchers value native tokens and free dev handoff



- Import is slow: one page took 37 minutes to convert



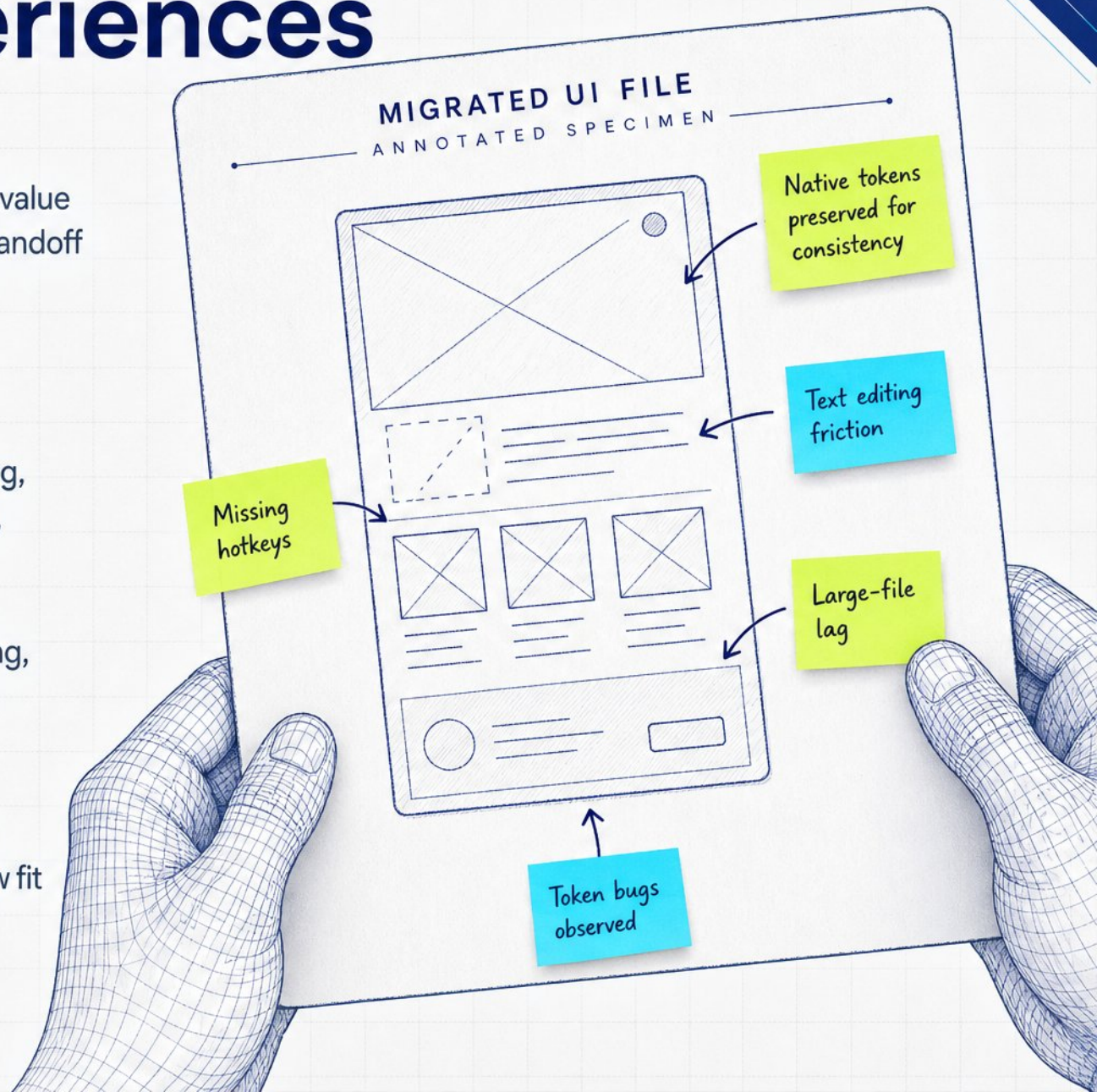
- Reported friction: text editing, missing hotkeys, token bugs, large-file lag



- Enterprise draws: self-hosting, privacy, open formats for regulated work



- Lessons: pilot first, expect a learning curve, judge workflow fit



Getting Started Roadmap and 30-Day Practice Plan



- Free Penpot Cloud account: sign up with email or Google/GitHub, no credit card



- Structured path: interface tour, wireframing, flex and grid layout, components, tokens, prototyping



- Practice projects: mobile login screen, landing page, component library, 3-page prototype

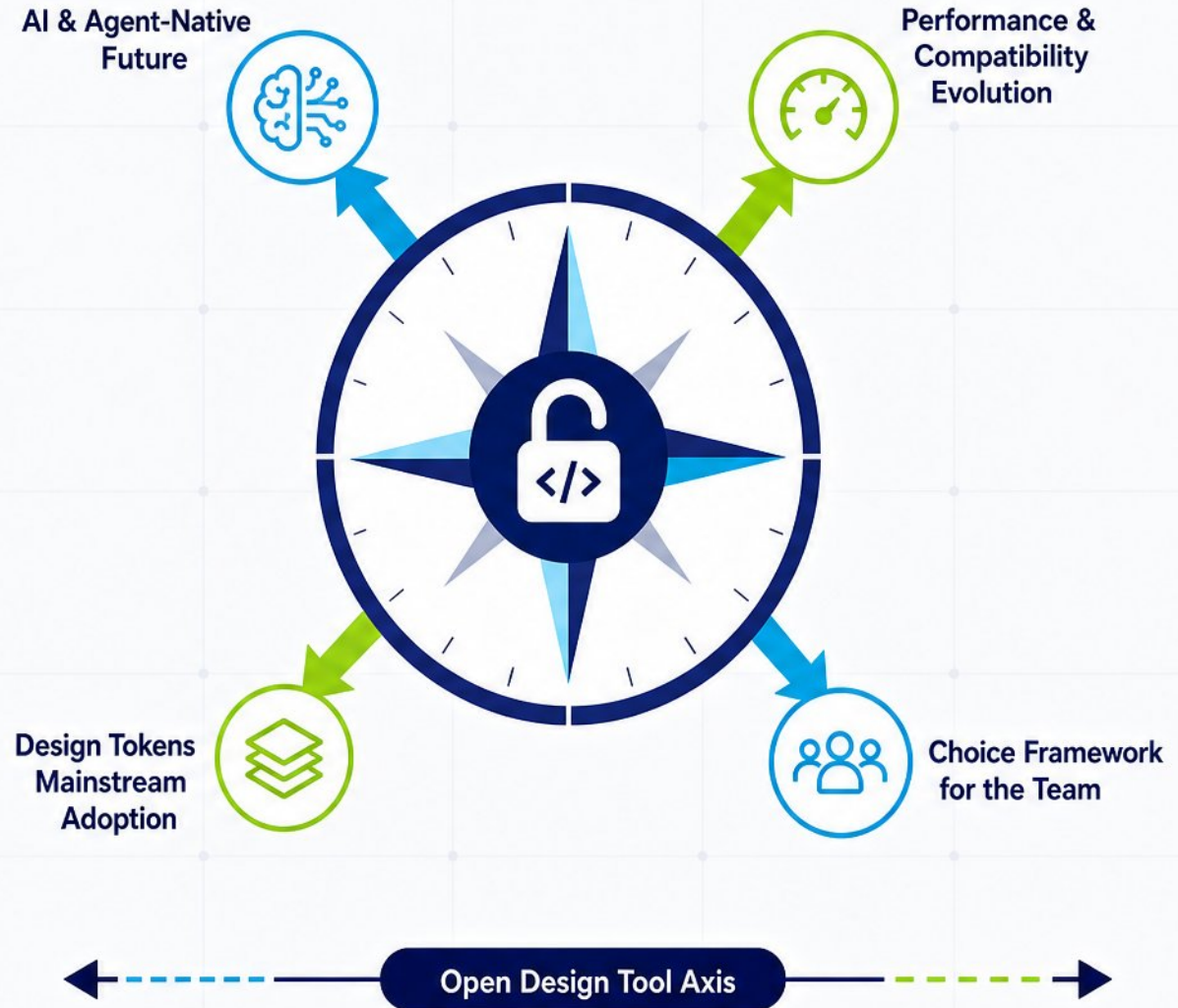


- Support: official docs, Penpot courses, PenpotHub templates, community forums, YouTube tutorials



Future Direction and Making an Informed Choice

- AI-assisted design, MCP servers, and agent-native tools shape the next wave
- Penpot targets performance and plugins; OpenPencil pushes offline Figma compatibility
- Design tokens gain broader adoption across open-source tools
- Pick Penpot for control and self-hosting, Lunacy for free desktop work
- Choose Figma when ecosystem depth and polished collaboration are non-negotiable
- Framework: weigh cost, data sovereignty, developer fit, plugins, and team capacity



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