**“LawMasters” (Mobile + Desktop)**

**Role:**  
You are a senior full-stack architect and product team (PM + UX + FE + BE + DevOps + QA) building **LawMasters**, an affordable practice OS for Indian lawyers. Ship a production-ready MVP in 90 days, with a clear upgrade path.

**Core outcomes (MVP scope):**

1. **Court Alerts & Diary:** unified matter tracking across Indian courts/tribunals; daily cause-list digests; reliable push alerts; conflict-free calendar; offline “day book.”
2. **Filing Co-Pilot:** guided intake, court-specific checklist, PDF validator (margins/fonts/page size/annexures), auto index, bundle maker; hand-off to official e-filing portals (no scraping logins during MVP—open in browser with prefilled checklists).
3. **Matters • Tasks • Time • Billing:** matters, parties, hearings, tasks, timers, expenses; GST-ready invoices (UPI/NEFT links), ledger, exports (CSV/PDF).
4. **Client Updates (Ethics-safe):** WhatsApp/SMS/email progress for **clients of record only**; no solicitation or marketing.

**Phase-2 (design now, implement later):**

* **Research & Drafting RAG:** over free Indian sources (e.g., e-SCR, Indian Kanoon API) with pin-cite inserts.
* **Evidence Vault:** mobile capture with timestamp/geo-tag, hashing, tamper-evident chain-of-custody report PDF.
* **Copy/NSTEP trackers:** track Certified Copy requests; surface process-service statuses where available.
* **Vernacular assists:** on-device/offline-first summaries and translations for bilingual workflows.

**Users & constraints:**

* Users: solo advocates, chambers (2–15), boutique firms; often low connectivity; Android-heavy; Windows-heavy on desktop.
* Compliance: **BCI Rule 36** (no advertising/solicitation), **DPDP Act** (India data residency, consent, access control, breach workflow).
* UX: fast, offline-first, dark-mode, keyboard-friendly; Hindi/English to start; a11y (WCAG AA).

**Architecture & Stack (justify choices; then implement)**

**Mobile:** React Native (TypeScript), SQLite (WatermelonDB or Expo SQLite) + field-level AES encryption; FCM push.  
**Desktop:** Tauri (preferred) or Electron wrapping the same React app; file-system access for scanners/PDFs.  
**Web/admin:** React + Vite + Tailwind + shadcn/ui.  
**Backend:** Node.js (NestJS) or Go (Fiber) + PostgreSQL; Prisma (if Node) or SQLC (if Go); Redis for queues/cache; object storage (S3-compatible, **ap-south-1**).  
**Infra:** Docker, Terraform, GitHub Actions CI/CD; deploy to a Mumbai region (AWS/GCP/Azure).  
**Obs & Sec:** OpenTelemetry traces; Prometheus/Grafana; Sentry; Vault/KMS; JWT + refresh; RBAC (Owner/Partner/Associate/Clerk/Client).  
**Docs:** OpenAPI 3.1; ADRs; README(s) with one-command bootstrap.  
**Licensing:** OS components under permissive licenses; keep a third-party SBOM.

**Data model (design full ERD + migrations)**

Define tables (with indexes, FKs, soft-delete, row-level org scoping):

* orgs, users, roles, memberships
* matters (court, forum, case\_no, filing\_no, subject, stage, tags, lead\_counsel\_id)
* parties (matter\_id, role, name, contact)
* hearings (matter\_id, date, bench, purpose, result, next\_date, notes)
* dockets (ingested items: orders, cause-list entries, uploads)
* tasks (assignee, due, status, linked to matter/hearing)
* time\_entries (timer, rate, billable flag)
* expenses (category, amount, tax)
* invoices (GST fields, line\_items, status, PDF blob path)
* notifications (type, channel, payload, status)
* files (hash, size, storage\_path, source, chain\_of\_custody\_json)
* settings (org-level preferences, e.g., BCI safe-mode, locales)
* integrations (Leegality, WhatsApp provider, SMTP, webhook endpoints)
* audit\_logs (actor, action, entity, before/after, ip)
* consents (DPDP receipts, purpose, data principals)

Provide SQL migrations and seed data (5 demo matters across District, High Court, NCLT).

**Key modules (spec + code)**

**1) Court Alerts & Diary**

* **Adapters layer** with clear interfaces: ICourtAdapter.getCauseList(), getOrders(), searchCase({caseNo, party, advocate}).
* Start with **stateless scraping/parsing of public pages** or RSS where offered; fall back to user-provided case IDs; design for per-court variance and retries/backoff.
* **De-dupe & normalize** into dockets and hearings; generate **smart nudges** (e.g., “Filing window closes in 3 days”).
* **Calendar**: bi-directional with device/Google Calendar (opt-in); conflict detector; printable day sheet.
* **Offline**: local cache; read-only when offline; queued sync.

**2) Filing Co-Pilot**

* **Rule engine** using JSON court profiles: required docs, margins, fonts, affidavits, annexure labeling, fee hints.
* **PDF toolkit**: validate page size (A4/legal), margins, fonts (embed check), bookmarks, Bates numbering, auto index, merge/split, TOC; export a **filing bundle** with checklist PDF.
* **Handoff**: open official e-filing portal in system browser with a side panel showing the generated checklist + file paths.

**3) Matters • Tasks • Time • Billing**

* CRUD UIs (list, filter, global search), timers (start/stop from anywhere), batch actions, CSV/PDF exports.
* **Invoice generator**: GSTIN fields, HSN/SAC where applicable; QR/UPI link; email/WhatsApp share; ledger aging report.

**4) Client Updates (BCI-safe)**

* Channels: SMTP, WhatsApp API provider, SMS.
* **Guardrail:** can only send updates on linked matters to contacts tagged as clients. No broadcast campaigns.
* Templates with variables (matter, hearing, date, next steps). Queue + retry, opt-out links, audit trail.

**Security, DPDP & Compliance**

* India region hosting; encryption at rest + in transit; database row-level org isolation; fine-grained RBAC.
* **Consent receipts** for client communications; SAR/erasure workflows; data retention policies.
* **BCI Rule 36 mode** feature flag — enforce within UI and API (block “marketing” endpoints).
* **PII classification** and redaction helpers for shared PDFs.

**UX & UI requirements**

* Tailwind + shadcn/ui; polished, uncluttered; keyboard shortcuts; undo/redo for edits; optimistic UI.
* Mobile nav: Home (Today), Matters, Calendar, Tasks, Billing, Files.
* Desktop: 3-pane layout (list / details / activity); print-friendly day sheet.
* Accessibility: focus states, screen-reader labels, color-contrast.
* Internationalization scaffolding (EN/HIN); date/time locale = **Asia/Kolkata**.

**DevEx & CI/CD**

* Monorepo (pnpm workspaces or Nx) with apps: mobile, desktop, web-admin, server, packages/\*.
* Lint/format/test gates; Preview deploys; schema-first API; strongly-typed SDK client (@lawmasters/sdk).
* Feature flags (configcat/variant); migrations auto-run; seed command.

**Deliverables (produce all)**

1. **System design doc** (diagrams + ADRs).
2. **ERD + SQL migrations** and seed script.
3. **OpenAPI 3.1 spec** + generated typed client.
4. **Backend** service with auth, RBAC, matters, hearings, tasks, timers, invoicing, notifications, files, court adapters (2 examples), PDF toolkit.
5. **React Native app** (Android+iOS) with offline cache, push, screens for MVP.
6. **Tauri desktop** app for Windows/macOS/Linux; printer/scanner integration stubs.
7. **Admin web** for org/user management, invoice templates, rule profiles.
8. **Tests:** unit, contract (API), e2e (Playwright for web/desktop; Detox for mobile); sample fixtures for 3 courts.
9. **Infra:** Terraform, Dockerfiles, GitHub Actions; monitoring dashboards; runbooks.
10. **Docs:** README quickstart, deployment guide, security posture, operator handbook.

**Acceptance criteria (must pass)**

* Create a matter, attach parties, receive at least one **ingested docket item** via an adapter, generate a **cause-list digest**, schedule to calendar, and send a **client-safe update**—**all offline-tolerant** with later sync.
* Validate a mixed PDF set; produce a court-compliant indexed bundle with Bates numbers and TOC.
* Generate a GST invoice, share via WhatsApp/email, mark payment received; ledger updates.
* Toggle **BCI-safe mode** and verify that broadcast/marketing UIs vanish and APIs block attempts (403 + audit log).
* DPDP flows: capture consent, export a client’s data, delete on request (soft delete + redaction), log actions.
* Cold start to first usable screen < 3s on mid-tier Android; common actions reachable in ≤2 taps.

**Pricing tiers & limits (enforce in code)**

* **Solo:** 10 active matters, 2 GB storage, 1 org user.
* **Chambers:** 5–15 users, 50 GB pooled storage, shared matters.
* **Firm:** unlimited matters, Evidence Vault basic, RAG capped queries/day.
* Quotas checked via middleware; graceful upsell messages (non-intrusive).

**What to generate now (order of output)**

1. A short **system design** overview (ASCII diagram).
2. **ERD** (DDL SQL) and initial Prisma/SQLC schema files.
3. **OpenAPI** spec (YAML) for MVP endpoints.
4. Backend repo scaffold + first two **court adapters** (pick: Delhi HC public cause-list style + District Court generic).
5. **PDF validator & bundler** module with a CLI (accepts a folder, outputs /bundle/out.pdf + /bundle/checklist.pdf).
6. React Native screens (Today, Matters, Matter Detail, Calendar, Tasks, Billing, Files) with mocked data + hooks to SDK.
7. Tauri wrapper for desktop with filesystem picker + print.
8. CI pipeline (build, test, lint) + Docker compose for local dev.
9. Seed script with demo org, 3 users, 5 matters, 8 hearings, 12 dockets, 2 invoices.
10. A minimal **runbook** for support (rotations, alarms).

**Output everything as code blocks with clear folder paths, and keep each artifact under practical length by focusing on the core patterns plus 1–2 end-to-end examples.**

**MODULAR FOLLOW-UPS after the above work is complete.**

**A) Court adapter scaffold**

“Generate a reusable ICourtAdapter interface and two concrete adapters: DelhiHighCourtAdapter, GenericDistrictAdapter. Include retry/backoff, HTML→JSON parsing, unit tests with fixtures, and normalization into dockets/hearings.”

**B) PDF validator & bundler**

“Create a Node module @lawmasters/pdf-tools with functions: validatePdfRules(), batesNumber(), makeIndex(), mergePdfs(), exportBundle(). Add a CLI. Provide tests with sample PDFs.”

**C) Evidence Vault (Phase-2)**

“Implement mobile capture flow: EXIF timestamp/geo, SHA-256 hashing, local encryption, upload with integrity check, and a chain-of-custody.pdf report generator.”

**D) Research & Drafting RAG**

“Build a small RAG service over e-SCR/Indian Kanoon API. Ingest ~1k judgments, chunk, embed (local model), store in pgvector; API endpoint /draft/brief returns structured sections with pin-cite anchors.”

**E) DPDP compliance kit**

“Add consent receipts, SAR export, and deletion workflows; audit logs with tamper-evident hashing; breach runbook template; DPIA checklist.”

**F) BCI Rule-36 safe mode**

“Feature flag that hides marketing surfaces; server middleware that blocks non-compliant endpoints; add tests to prove enforcement.”