

Specifications – Psychological Supervision Application

1. Overview

A web application (mobile friendly) designed for psychologists to:

- Manage patient records
 - Structure clinical cases
 - Interact with a clinical AI assistant
 - Take notes (typed or handwritten with OCR recognition)
 - Generate anonymized reports
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2. User Flow (MVP)

2.1 Patient Management

- Create a patient record:
 - Name or ID/pseudonym
 - Age
 - Reason for consultation
 - Consents
 - Anonymization option on/off

2.2 Patient Instructions

- Structured free text:
 - Case history (anamnesis)
 - Diagnostic hypotheses (CBT, EMDR...)
 - Therapeutic goals
 - Cultural/legal constraints
- Secure storage and consultation

2.3 Interaction with the Clinical Bot

- Chat area per patient
- Suggest formulations, intervention ideas, session plans
- Clinical risk alerts

2.4 Note-taking

- During or after the session
- Standard text mode
- Handwriting mode via stylus/mouse:
 - Drawing area (“net” style)

- Handwriting → text conversion via OCR
 - Save both raw handwriting and text transcription
- Automatic linking to the session and patient

2.5 Structured Notes and Trackers

- Evaluation scales
- Goal tracking
- Patient history

2.6 Export and Summary

- Generate anonymized summaries
 - PDF export
 - Export history
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3. Constraints & Security

- Secure authentication (NextAuth, JWT)
 - Encrypted database (patients, notes)
 - Regular backups
 - GDPR compliance
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4. User Stories (extracts)

Auth & organizations

- US1.1: Sign up with email/password + 2FA (AC: account created, email verification, OTP enabled)
- US1.2: Create organization + invite members (AC: roles Owner/Admin/Member)

Patient management

- US2.1: Create pseudonymized patient (AC: no identifying data, audit log)
- US2.2: List/search/archive (AC: status filters, anonymization)

Instructions

- US3.1: Write instructions with versioning (AC: diff between versions, restore possible)

AI Chat

- US4.1: Contextual chat per case file (AC: access limited to current patient's data, quick actions, legal disclaimer)

- US4.2: Per-case history, pin a response

Notes & scores

- US5.1: Create session note (AC: full fields, quick templates)
- US5.2: Enter scores (auto-calculation + warning)

PDF exports

- US6.1: Generate summary (AC: anonymized, encrypted storage, download)

Traceability

- US7.1: Safety checklist (side panel, risk checklist)
- US7.2: Complete audit log

5. Data Model (simplified)

Main tables:

- User
- Patient
- CaseFile
- Instructions
- SessionNote
- ChatThread
- Message
- Attachment
- AuditLog

Keys and indexes: FK, index on org_id/patient_id/casefile_id, soft-delete if needed.

6. REST API (examples)

- POST /auth/register
- GET /patients?query=...
- POST /casefiles/{id}/instructions
- POST /casefiles/{id}/threads
- POST /casefiles/{id}/notes
- POST /casefiles/{id}/exports

7. AI Prompts (modes)

System: Clinical supervision assistant, no diagnosis/prescription, risk alerting

Examples:

- CBT formulation in 6 columns + 3 alternative hypotheses
 - 45-minute session plan (timed)
 - At-home exercises adapted to context
 - Targeted Socratic questions
 - Risk analysis (suicidal ideation, violence...)
 - EMDR preparation + targets
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8. GDPR & Security

- Pseudonymization by default
 - EU-based hosting
 - Encryption at rest/in transit
 - DPIA, processing register
 - No storage of prompts/responses in plain text
 - Auto-masking of sensitive data in exports
 - Organization-level purge/deletion + DCP export
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9. NFR (Non Functional Requirements)

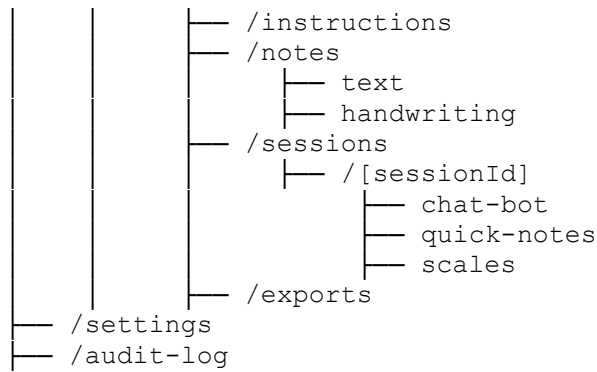
- TTFB < 400 ms (HTML)
 - Key actions ≤ 3 clicks from patient page
 - Availability 99.5%
 - Backups: RPO 24h, RTO 4h
 - 80% test coverage for critical lines
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10. Risks & Mitigation

- **HDS compliance:** MVP with strict pseudonymization, HDS switch later
 - **AI costs:** batching + caching + EU models
 - **Adoption:** freemium (3 case files), fast onboarding
 - **Prompt leakage:** input/output filtering, redaction
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11. UI Tree – Interfaces & Navigation

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/ (Dashboard)
├── /login
├── /patients
│   └── /[id] (patient record)
```



12. Recommended Tech Stack

Frontend

- Next.js 14 (App Router)
- React 18
- Tailwind CSS
- Shadcn/UI (UI components)
- React Query (TanStack)
- Konva.js / Canvas API (handwriting)
- date-fns

Backend (Next.js API)

- Prisma 5 (ORM)
- PostgreSQL
- NextAuth.js (authentication)
- bcryptjs (password hashing)
- Zod (validation)
- pdf-lib / PDFKit (PDF)
- Azure Computer Vision or Google Cloud Vision (OCR)
- OpenAI / Claude API (AI)

DevOps & Tools

- Vercel (hosting)
- Railway / Supabase / Render (PostgreSQL)
- GitHub Actions (CI/CD)
- ESLint + Prettier (code quality)
- Docker (optional)
- Postman / Bruno (API testing)