# Unified Healthcare Records Application

A centralized platform for managing digital health records with secure access, appointment scheduling, and AI-assisted voice dictation for enhanced healthcare workflows.

## 📌 Notion Project Tracker (2-Month Plan)

| Task | Assignee | Status | Due Date | Priority | Notes |
| --- | --- | --- | --- | --- | --- |
| Project Kickoff & Scope Finalization | - | Done | Jul 1 | High | Define project scope and milestones |
| UI/UX Wireframe Design | - | In Progress | Jul 6 | High | Create responsive wireframes for web app |
| User Auth Module (JWT + Roles) | - | To Do | Jul 10 | High | Includes login, signup, and role access |
| Patient Records CRUD APIs | - | To Do | Jul 15 | High | Mongo/PostgreSQL based APIs |
| Appointment Scheduler Module | - | To Do | Jul 20 | Medium | Doctor/patient booking system |
| Prescription Management | - | To Do | Jul 25 | Medium | E-prescriptions and medication logs |
| Voice Dictation AI (Google STT) | - | To Do | Jul 30 | High | Transcribe consultation notes via mic |
| Dashboard & Analytics UI | - | To Do | Aug 5 | Medium | Charts for appointments, records |
| Integration Testing | - | To Do | Aug 10 | High | Validate module interconnectivity |
| Security Audit & MFA | - | To Do | Aug 15 | High | Test data protection, MFA setup |
| Deployment on AWS EC2 | - | To Do | Aug 20 | High | Production push with SSL & backups |
| Final QA & Documentation | - | To Do | Aug 25 | High | Cleanup, test cases, final PDF |

## 📄 PDF Documentation (Layout Summary)

### 1. Project Overview

The application is designed to unify scattered health records into one secure digital system accessible to doctors, patients, and healthcare administrators with advanced AI voice assistance.

### 2. Module Breakdown

* **Module 1:** JWT-based Auth and Role Management
* **Module 2:** Patient Profile and Health Data Management
* **Module 3:** Appointment & Slot Booking
* **Module 4:** Prescription Generation
* **Module 5:** AI Voice Integration for Dictation
* **Module 6:** Lab Upload System with Report Parsing
* **Module 7:** Admin Dashboard & Analytics Charts

### 3. Tech Stack

* **Frontend:** React.js + Tailwind CSS
* **Backend:** Node.js with Express
* **Database:** MongoDB or PostgreSQL
* **AI Voice:** Google Speech-to-Text or Whisper API
* **Auth:** JWT + Bcrypt + MFA
* **Cloud:** AWS EC2, S3, RDS (if SQL)

### 4. Workflow Description (Simplified)

* User logs in → token generated → navigates to dashboard
* Patient data fetched via secured API → shown in UI
* Doctor uploads notes or uses voice → converted to text
* Appointments shown in calendar view → book/update

### 5. Security Protocols

* HTTPS, AES-256 storage encryption, JWT validation
* Access logs, audit trail, and optional HIPAA readiness

### 6. Deployment Strategy

* Dockerized containers
* GitHub Actions CI/CD
* NGINX + SSL + Domain

### 7. Future Scope

* Mobile app (Flutter)
* Wearable health integration
* FHIR/HL7 APIs for hospital data sync

## 📊 Comprehensive Action Plan & Resource Summary

### 1. Project Resources

* **Documentation PDF**: Unified\_Healthcare\_Records\_Kit.pdf
* **Notion CSV Board**: notion\_project\_tracker.csv
* **Boilerplate Source ZIP**: healthcare\_app\_boilerplate.zip
* **GitHub README Template**: see Docs folder

### 2. Modules & Required Updates

| Module | Key Enhancements |
| --- | --- |
| Auth & Role Management | Add **MFA**, password‑reset flow, refresh tokens |
| Patient Records CRUD | Advanced search filters, strict file‑upload validation |
| Appointment Scheduler | Email / SMS reminders via SendGrid & Twilio |
| Prescription Service | Integrate drug‑interaction API (e.g., FDA OpenAPI) |
| Voice Dictation AI | Multi‑language support, command parsing library |
| Dashboard Analytics | Real‑time charts, CSV export, drill‑down filters |
| Lab Integration | HL7 / FHIR parser, auto‑tagging of report PDFs |

### 3. Features to Build (Next 8 Weeks)

1. **Telemedicine (WebRTC) module**
2. Tailwind‑based **mobile‑responsive redesign**
3. **Admin audit‑log viewer** interface
4. **Bulk patient import** (CSV → DB)
5. Role‑based **PDF record export**

### 4. Technology Improvements

* Migrate API layer to **TypeScript**
* Introduce **GraphQL gateway** for complex queries
* Add **Docker Compose** for turnkey local stack
* Enforce code quality with **ESLint + Prettier**
* CI pipeline: **GitHub Actions** for lint/test/build
* Investigate **PostgreSQL logical replication** for read scaling

### 5. Process Recommendations

* **2‑week Agile sprints** with planning & retro
* **Daily 15 min stand‑ups**
* Pull‑request **code reviews** with templates
* **Automated tests** (Jest/Supertest) in CI
* **Monthly security pentest** & **quarterly backup drill**

### 6. Eight‑Week Action Checklist

| Week | Focus | Deliverables |
| --- | --- | --- |
| 1 | DB Schema v1.1, MFA | Finalized ERD, MFA endpoints |
| 2 | Email Service | SES/SendGrid integration, UI hooks |
| 3 | Reminders | Cron job, Twilio SMS prototype |
| 4 | Telemed P‑0 | WebRTC MVP, internal demo |
| 5 | Audit Log UI | Admin page, RBAC tests |
| 6 | Security Fixes | Pentest report & patches |
| 7 | Load/Perf Test | k6 scripts, query optimisation |
| 8 | Prod Deploy | Blue‑green rollout, post‑deploy QA |

### 7. Ownership Matrix (RACI)

| Role | Responsible | Accountable | Consulted | Informed |
| --- | --- | --- | --- | --- |
| Product Owner |  | ✔️ | ✔️ | ✔️ |
| Tech Lead | ✔️ | ✔️ | ✔️ | ✔️ |
| Frontend Dev | ✔️ |  |  |  |
| Backend Dev | ✔️ |  |  |  |
| DevOps | ✔️ |  |  |  |
| QA | ✔️ |  |  |  |

### 8. Immediate Next Steps

1. Import CSV into Notion → convert to Kanban
2. Push boilerplate code to new GitHub repo
3. Add environment files (.env) for dev & prod
4. Schedule **Sprint 0 kickoff** meeting

## 📘 GitHub README Template

# Unified Healthcare Records Application  
  
A full-stack platform for managing electronic health records with secure user roles, AI-based voice dictation, and modern UI/UX.  
  
## 🚀 Features  
- Role-based user registration (Doctor, Patient, Admin)  
- Patient record management (CRUD)  
- Appointment booking system  
- Voice-to-text AI for clinical notes  
- Analytics dashboard  
- JWT + MFA security  
  
## 🛠 Tech Stack  
- \*\*Frontend:\*\* React.js  
- \*\*Backend:\*\* Node.js + Express  
- \*\*Database:\*\* MongoDB/PostgreSQL  
- \*\*AI:\*\* Google STT or Whisper  
- \*\*Deployment:\*\* AWS EC2 + Docker  
  
## 📦 Installation  
```bash  
git clone https://github.com/your-username/healthcare-app.git  
cd backend && npm install  
cd ../frontend && npm install

## 🌐 Environment Variables

* .env file in backend with DB\_URI, JWT\_SECRET, STT\_API\_KEY

## 📁 Folder Structure

root/  
├── backend/  
│ └── routes/, controllers/, models/  
├── frontend/  
│ └── components/, pages/, services/  
├── docker-compose.yml  
└── README.md

## 🤝 Contributing

Pull requests welcome. Please lint and test your code.

## 📄 License

MIT

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Let me know if you'd like:  
- A downloadable \*\*PDF version\*\*  
- A \*\*Notion template link\*\*  
- The full \*\*GitHub repo structure\*\* as a `.zip`  
  
I can generate those next!