



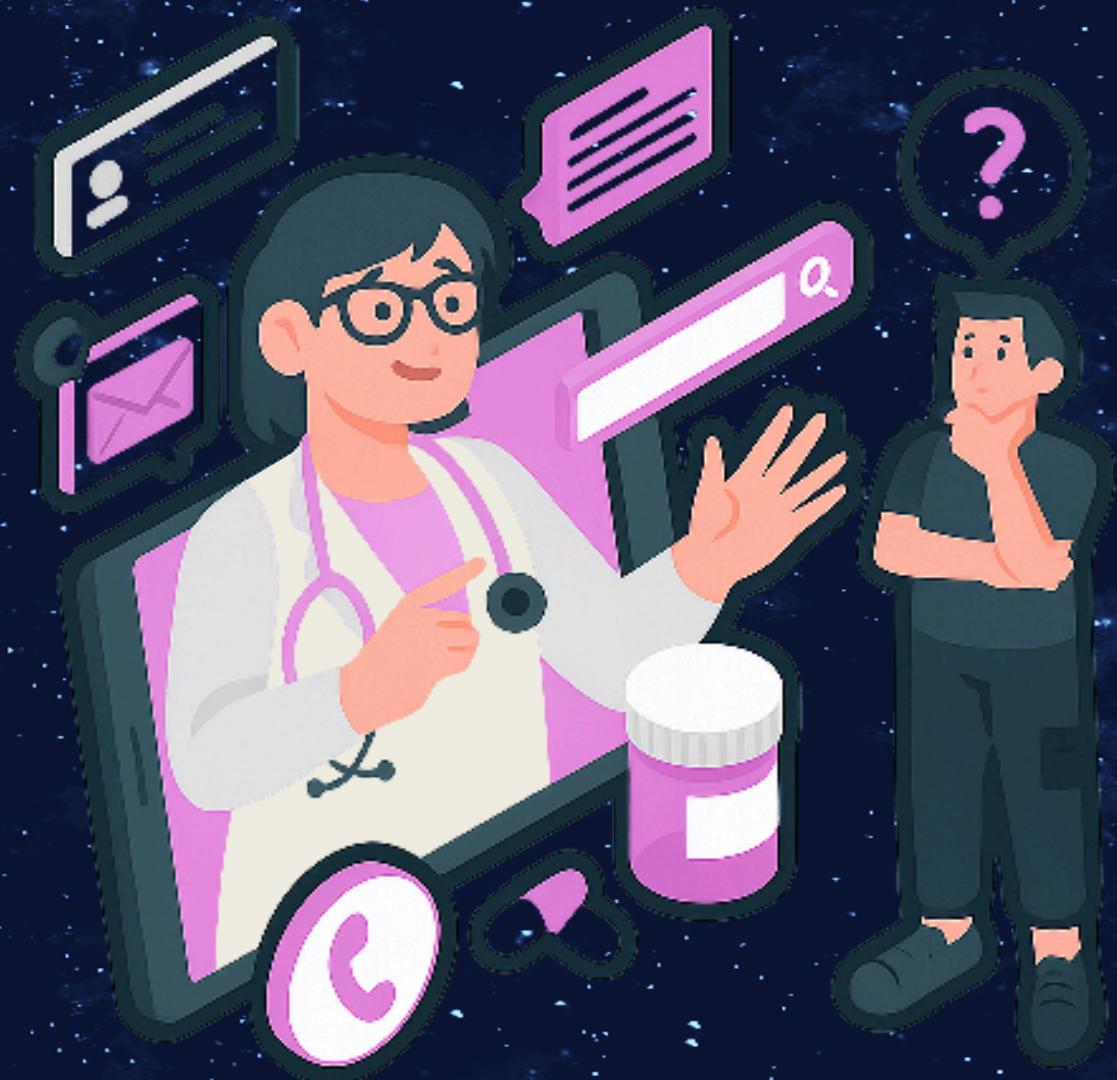
HackOrbit2025

Team Name:
QuadraCodes

THEME & PROBLEM STATEMENT

Theme: Healthcare Technology

Democratizing Health Literacy. Empowering every patient—regardless of language, age, or background—to understand their medical reports with clarity, confidence, and control.



Problem Statement

For millions, lab reports and prescriptions are more confusing than helpful. Filled with jargon, abbreviations, and unclear instructions, these documents are made for doctors—not the patients who rely on them. Even a simple blood test or prescription can raise critical questions:

What does this mean? Is it safe for me? When should I take it?

This confusion isn't just frustrating—it's risky. Misunderstanding medical info can lead to stress, misuse, delayed care, and serious health consequences.

The problem is even more critical for:

- ➊ Elderly patients
- ➋ Non-English speakers
- ➌ Visually impaired users
- ➍ Rural and low-literacy communities

Digital healthcare may be evolving, but one fundamental need is still unmet: a simple, inclusive, and trustworthy way to understand your own health data.

BECAUSE NO ONE SHOULD NEED A MEDICAL DEGREE TO UNDERSTAND THEIR OWN BODY.

BECAUSE HEALTH LITERACY SHOULD BE A RIGHT – NOT A PRIVILEGE.

PROPOSED SOLUTION

Meet Rani,

Rani, a 40-year-old homemaker from a small town, just got back from a health check-up. But the medical report? Confusing. The prescription? Even worse.



Rani simply opened our website and clicked “**Upload Report**.”

No apps. No login. Just one photo – and her confusion started melting away.

📸 **She uploads her report.**

🤖 **Our AI takes over.**

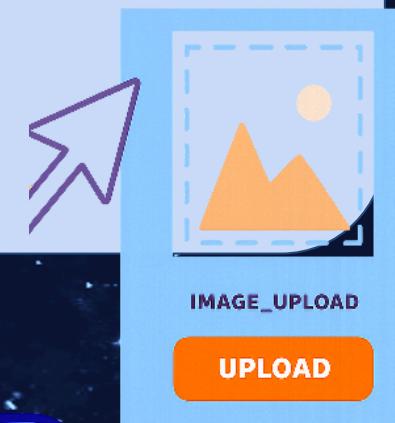
It reads printed or handwritten content and instantly explains everything:

“Triglycerides” becomes **fat in your blood**

“Hypokalemia” becomes **low potassium**

All in plain, simple language – right on the screen.

No jargon. No stress. Just clarity.



Now that Rani understands her health – she’s in control.

💊 **She knows her medicines:**

What they do. When to take them. What to watch out for.

🔊 **She hears it clearly too:**

With our voice assistant, Rani can listen to her report in her own language anytime. As many times as she wants.

📄 **Everything is saved:**

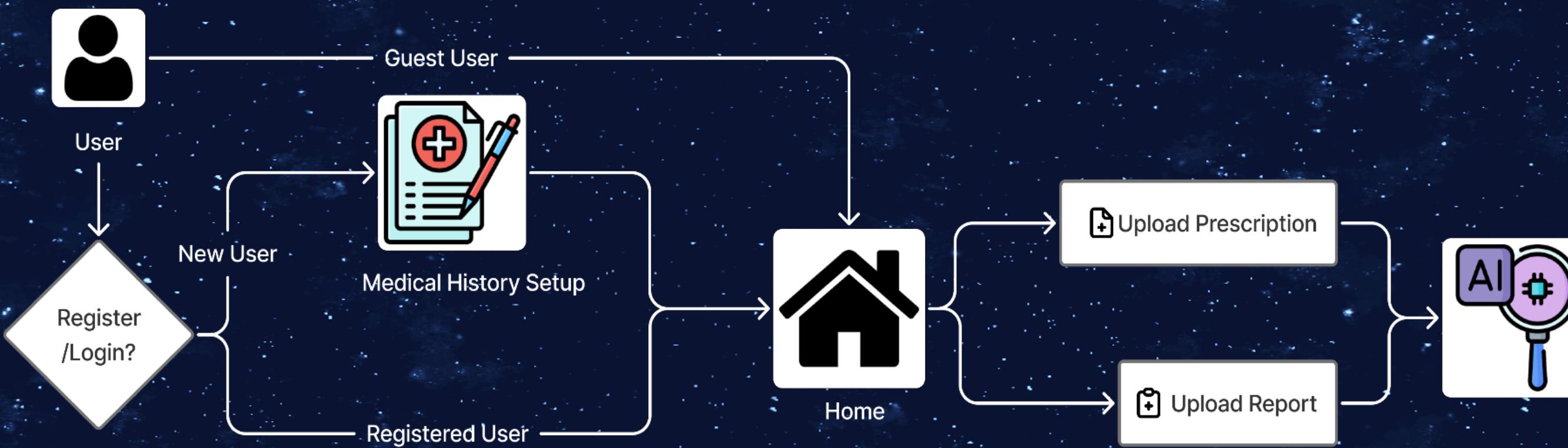
A clean summary of her health, explained simply, stored safely – right on our website.



Understanding is the first step to Healing

FLOWCHART

USER FLOW:



WORKFLOW:

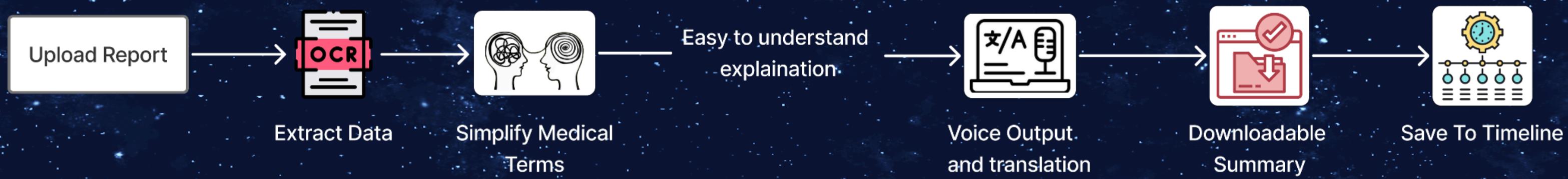
A user lands on the platform – no app, no hassle. They can register, log in, or explore as a guest. A quick medical history setup is offered – helpful, but totally optional. On the home screen, they choose to upload a prescription or a report. One upload – that's it. The AI instantly takes over, decoding jargon and explaining everything in clear, simple language. Confusion turns into clarity, effortlessly.

FLOWCHART DESCRIPTION



PRESCRIPTION:

The user uploads a prescription as an image or PDF. OCR extracts medicine names and dosages, which are then matched with a drug database. The system checks for allergies, interactions, and dosage warnings. It then generates a simple, patient-friendly explanation—what each medicine is for, how and when to take it—with optional voice output. The summary is saved for future access.



REPORT:

The user uploads a medical report. OCR extracts data from both printed and handwritten text. AI then simplifies medical terms and gives a thorough analysis of the medical report. The explanation is delivered via voice output and translated into multiple languages. A clear, downloadable summary is provided, and all information is saved to the user's timeline to build a personal health record.

TECH STACK

Frontend

- **React.js** – Build interactive user interface
- **Tailwind CSS** – Rapid and responsive styling
- **Web Speech API** – Multilingual Text-to-Speech (TTS) & Speech-to-Text (STT)

Backend

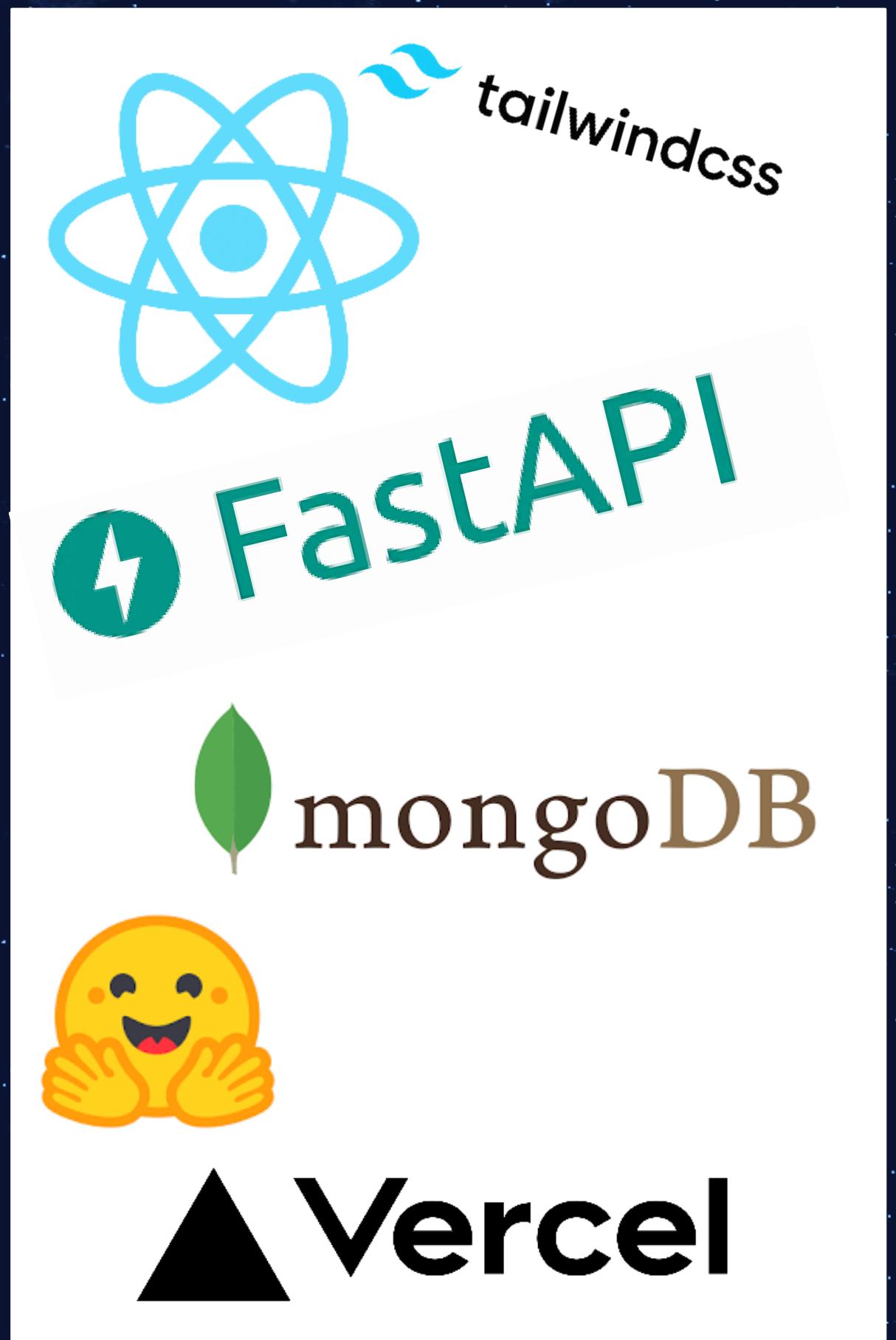
- **FastAPI (Python)** – Lightweight, fast backend API
- **pytesseract** – Extract text from uploaded reports (OCR)
- **Transformers** – Simplify complex medical terms
- **Whisper** – High-accuracy speech-to-text (STT)

Database

- **MongoDB Atlas** – Store report metadata, extracted text, simplified output, and audio references

Deployment

- **Vercel** – Frontend + Backend



FEATURES AND NOVELTY

→ Prescription/Report Upload

Snap or upload – let the app handle the complex part.

→ OCR for Handwriting & Printed Text

Doctor's handwriting? Decoded in seconds.

→ Medical Jargon Simplification

Turns "hyperlipidemia" into "high cholesterol." Simple!

→ Multi-Language Support

Your health, your language – no barriers.

→ Audio Explanations

Let the app talk your report out loud – perfect for seniors.

→ Medicine Details with Clarity

Why, when, how, and what to expect – know your pills better.

→ Accessibility First Design

Bold fonts, contrast toggle, and voice-first navigation.

→ Auto Health Summary Card

Your 5-page report → 5-line summary. Instant clarity.



"Making medical reports speak the patient's language – clear, compassionate, and completely understandable."



Patient-Centered Design

Not built for doctors – designed for you: elderly, rural, and non-English users first.



Conversational AI

You don't just read reports – you talk to them, and they reply in plain language.



Modal Multi Accessibility

Whether you prefer text, voice, or visuals – understanding comes your way.

DRAWBACK AND SHOWSTOPPERS



OCR Accuracy Issues

Low-quality scans, messy handwriting, and varied document layouts often result in incorrect extraction of medical data.



Translation & Language Complexity

Translating medical terms into local languages sometimes leads to confusion or misinterpretation.



Learning Curve for Vulnerable Users

Elderly or less tech-savvy users may find it difficult to navigate the interface independently.



Smarter Reports, Simpler Words

AI extracts key details from medical reports and prescriptions then explains them in clear, everyday language so users can easily understand their health.



One Snap = Full Medicine Plan

Click a photo of your prescription and instantly get a complete, organized schedule with when to take what, how much, and whether it's before or after food – no manual setup.



Speak Your Doubts, Get Instant Answers

Ask questions like "What does this test mean?" or "How do I take this medicine?" and get simple, spoken responses in your preferred language.

QuadraCodes

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Thank you